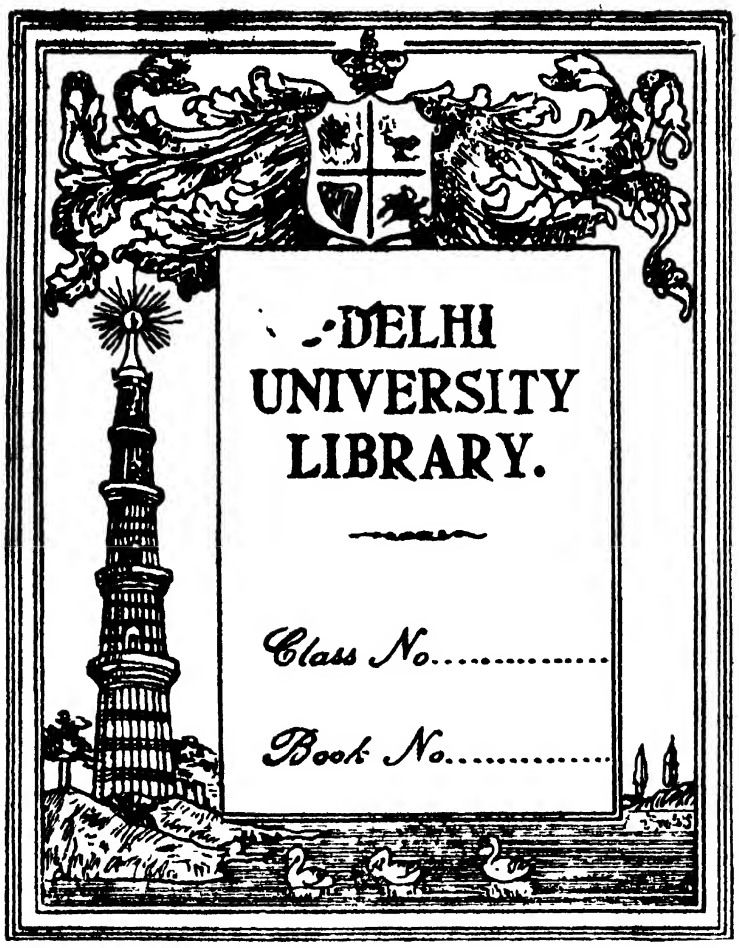
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THE RĀGAS OF KARNATIC MUSIC

BY

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PREFACE.

It has been my aim in the course of this treatise to investigate the evolution and the structure of Rāgas, comprised in the system of Karnatic Music, and I am proud of the privilege of having worked under Vidvan M.R.Ry. K. Varadachari Avl., one of the veteran musicians of South India, and former Lecturer in Indian Music, University of Madras. The Rāgas constitute the fundamental factor which determines the character of Indian Music. It may be said that our system of Music was moulded in the past mainly in relation to the laws governing the concept of the Rāga, and its future may be very largely guided by this influence.

Though the Rāga is so well known in practice, its theoretical aspects seem to have been only vaguely understood, and in many cases current ideas concerning them appear to be rather confused, partly owing to the string of differences of opinion and partly to insufficient acquaintance with the available literature on the subject. The need for a close study of the Rāgas and what they stand for is therefore evident, and this work is an attempt to consider the Rāga in relation to its historical background and its place in current practice, in the light of the wealth of literature preserved in palm leaves and printed books.

The historical approach to the subject needs no apology, since this sets the theme in its proper perspective for study; besides, by this means, one is enabled to unearth many ideas which have long remained forgotten but which have great practical value even to-day. So far as the practical aspects are concerned, the two most striking problems which call for attention at present and which have given rise to a good deal of controversy are the sañcāra rāgas in each rāga. In considering these questions, I have tried to base my conclusions after a careful scrutiny of the views of the various schools of thought, and by observing how and why they differ or agree. And in the case of śrutis, I have tried to make use of methods of exact measurement as far as possible. Owing to various considerations, my treatment of the subject had to be very brief but I have taken care not to omit any data or detail which might be necessary for a proper understanding of the problems discussed.

I am under a heavy debt of gratitude to the authorities of the University of Madras who kindly encouraged me, first by awarding a scholarship to work on this subject and subsequently by undertaking to publish my thesis under their auspices. I take this opportunity to express my grateful thanks to them.

I am deeply grateful to Dr. T. R. Chintamani, M.A., Ph.D., Senior Lecturer in Sanskrit, University of Madras, for the invaluable help he has rendered by correcting the proofs and taking charge of the publication through all its stages. My thanks are also due to the Madras Law Journal Press for the attractive get-up of the book.

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25—2—1938.

N. S. RAMACHANDRAN.

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CHAPTER I.

Introduction

The logic of the theory of Karnātic Music cannot be understood without a historical study of its development. Such an estimate would show that even from remote ages the North and South were in intimate cultural contact, and legend as well as history shows how inextricably Aryan and Dravidian culture became blended even before the era of Christ. The Śrutis which are of fundamental importance to both systems were conceived as 22 even before the time of Iḷaṅkovaḍigaḷ. Throughout the centuries we find the North and South mutually influencing one another in the development of the arts. Mahendra Varma Pallava published by carving on stone some compositions of the musical system of the North at Kuḍimiyāmalai in the 7th century A.D., and we find that a Tamil footnote is added to the inscription. Nānyadeva in his commentary on the Nāṭya Śāstra mentions Karṇāṭapāta tānas, and gives many other references to South Indian music. Even Mataṅga refers to Dravidian music. Śārṅgadeva defines a rāga called Devāravardhanī. Throughout the history of Saṅgīta literature we find a free exchange of opinion between the North and the South. Alāuddin Khilji took with him musicians from the South after his invasion of the country and Puṇḍarīka Viṭṭhala who was born in Aṭaṉūr in the extreme south went to the court of Khāndesh and wrote 2 treatises on North Indian music. Northern authors also took note of the views of South Indian theorists. What is most important to note is that every author from the time of Kallināṭha, who repre-

sented the music of the Vijayanagar empire, bases the theory of Karnātic music on the doctrines of Bharata and Śārṅgadeva.

We find from the extant literature on the music of South India that the present system in vogue is the product of evolution since the birth of civilisation in the country. We can trace in the Karnātic music of to-day some of the most striking features of the music of the Sāmaveda as well as the quintessence of the art as it was practised in the Dravidian country at the time of the birth of Christ. The scale of the Sāman music is the current Śuddha scale of South India (making allowance for slight changes that have occurred in its form during this long course of development); and the most popular among Karnātic Rāgas such as Śaṅkarābharaṇa, Kharahara-priyā, Tōḍi, Kalyāṇī, etc., are survivals of the art of the Golden Age of Tamil civilisation (Circ. the first century A.D.). Much of the literature on the music both of the North as well of the South is still not available, but there is ample material, which is helpful in throwing a good deal of light on practice and theory, scattered in libraries all over India.[1] From a perusal of the leading works on the subject, I am led to think that the theory of music as embodied in Tamil works has been no less active and powerful than that of the Sanskrit treatises in moulding Karnātic music into its present shape. There is a school of thought which may be said to be represented by Mr. Clements (*vide* his 'Introduction to the study of Indian music') according to which the Sanskrit books of Bharata and Śārṅgadeva have nothing to do with South Indian music. There is another school headed by the late Mr. Abraham Pandithar (see his Karuṇāmṛta Sāgaram)

1. Valuable information like the date, authorship, etc., concerning the available Sanskrit works is given in the articles on Saṅgīta literature contributed to the Journal of the Music Academy, Vols. III and IV by Dr. Raghavan, M.A.

whose view is that the Sanskrit theorists including Bharata and Śārṅgadeva copied their system and that also wrongly from the Tamil authors. The truth is somewhere between the two hypotheses. As a matter of fact there has been the closest co-operation in the development of the art between the North and the South. From very early times the 22 Śrutis and the 7 notes of the octave were accepted in common all over India. The fundamental aspects of both the systems of the North and the South have been the same. Taking South Indian writers as such, we find them quoting Bharata and especially Śārṅgadeva on Śrutis, Svaras, Tānas, Varṇas, Alaṅkāras, Gamakas, the general technique of singing, Prabandhas, Tālas, etc., in fact the whole range of music. Every one of them accepts the Śuddha scale of Bharata and Śārṅgadeva as his own. Accepting the whole body of the theory of these two, each practically tries to interpret lakṣaṇa as embodied in it and the ever changing and developing lakṣya. Some times the two are reconcilable; often their differences have to be admitted and are noted down. The way in which theory developed from century to century in respect of the problems concerning the subject-matter of this thesis is studied in the succeeding chapters, and we find a few germinal ideas slowly broadening into the elaborate form of the technique of the present day, in every one of its various aspects.

As regards the Svaras and Śrutis Sanskrit works till the time of Śārṅgadeva seem to be predominant. We do not know what part the Tamil works played in influencing them. Between the Śilappadikāram and the commentaries by Aḍiyārkunallār and Arumpadavuraiyār few works have survived to-day. But these three works are sufficiently explanatory and homogeneous to give a coherent idea of Tamil music and its influence. The one most striking feature of this system was the division of the octave into 12 almost equal divisions or 12 degrees.

We find this division to be a vital aspect of the division of the octave in Karnatic music to-day. Such a division may be made in several ways by the varied use of micro-tones but the principle of the division matters and is universally accepted. It may be said that this division in Tamil music is only incidental to the astrological parallel employed in the consideration of the octave and its śrutis; and the hypothesis may be proposed that since the Pañca (or Catuś) Śruti Ri was identified with Śuddha Ga, and Ṣaṭśruti Ri with Sādhāraṇa Ga, since the lower tetrachord Sa to Ma was taken to be divided only by Śuddha Ri, Śuddha Ga, Sādhāraṇa Ga and Antara Ga, since Śuddha Ma and Pa were taken to be separated by a sharp Ma and since the upper tetrachord Pa to Sa was considered a replica of the lower, the division of the octave into 12 Sthānas or degrees was evolved as a matter of development, when these notions about these notes were accepted about the time of Veṅkaṭamakhin. But as against this proposition, it must be noted that the ancient Tamils reckoned a fourth as the fifth note and a fifth as the seventh note respectively from the keynote, and this would not be possible if the octave was not divided into 12 degrees. This is most remarkable since it dates from the time before the Christian era. The influence of this division and also of the music of the Nāyaṉārs and Āḻvārs should have been persistently active in settling the form of Karnātic music, though we have not got any book on theory in Tamil after Aḍiyārkunallār which explicitly says this. Sanskrit being the language of the learned and the lingua-franca of the educated classes throughout India, theoretical treatises continued to be written after the epoch of Śārṅgadeva in Sanskrit. But we must remember that these books were written at the principal courts of the South and at the behest of important rulers, and hence they can be taken to be representative of the art they dealt about.

Coming to Rāmāmātya we find significant changes noted about theory in his book. Rāmāmātya accepts the Śuddha svaras of Śārṅgadeva but questions and corrects his Vikṛta Svaras. Most striking of all, he mentions Pañcaśruti and Ṣaṭśruti Ṛṣabhas and Dhaivatas, which are not given by Śārṅgadeva. How did he get these notes? Surely he did not create them, since they are found in the meḷas already prevalent in the country (*vide* his list of meḷas). The Śuddha Ri, Ga, Dha and Ni were already there. I think that only one inference is possible according to existing data on the subject. Namely, these notes were native to the South and they were probably the intervals used in the Tamil music of a by-gone epoch, which were recognised by every South Indian writer and which had survived to the present day. (There is no mention about these particular intervals in the Tamil works.) When once they are admitted, the meḷakartā scheme of 72 scales, built of the different combinations of these notes, follows as a natural consequence. As in this aspect, in ālāpa also we find the present practice based with remarkable faithfulness on the music of the ancient Tamils.

The history of South Indian music after the time of Śārṅgadeva (with whom the epoch of 'Grāma Music' may be considered to have come to a close) can be divided into two periods, *viz.*, one up to the time of Veṅkaṭamakhin and the other from his lifetime. By 'Grāma music' is meant the system of the jātis, grāma rāgas, etc., based on the 2 grāmas. After Śārṅgadeva the authors derive the rāgas from the Sa-grāma which alone they consider to be in vogue. The Ma-grāma had become defunct according to them, its pañcama having become a variety of the madhyama. At this period we find Vijayanagar leading the whole of South India. Kallināṭha, Lakṣmīnārāyaṇa, Rāmāmātya and others give us important information regarding the music of this time. By the middle of the

17th century we find that the musical centre of gravity had shifted to Tanjore. Govinda Dīkṣita had directly transmitted the torch of musical lore from Vijayanagar to Tanjore. The cream of Karnātic music was being formed at this centre of culture, which kept itself open to the influences of the North and even to some extent of the West (because the Tanjore Court patronised all kinds of talents), under the fostering care of the Nāyaka and Marāthā Rulers. The most outstanding treatise written at Tanjore was the Caturdaṇḍīprakāśikā of Veṅkaṭamakhin. It was followed up by Tulajā's Saṅgītasārāmṛta which popularised the system of Veṅkaṭamakhin. The Karnātic music of the present day is in conformity with this system in its main features. It may be remarked that surprisingly enough the Orissan musical literature of the 18th century, and Basava's Śivatattvaratnākara (Circ. 1715 A.D.), representative of the music of the Kannaḍa country, do not reveal any sign of having been influenced by Veṅkaṭamakhin's work.

After Veṅkaṭamakhin, Karnātic music developed rapidly along the lines laid down by him. But there seems to have occurred a silent revolution unnoticed in any theoretical work which has profoundly changed the face of Karnātic music. This revolution has made even the Caturdaṇḍīprakāśikā a book of the past, in spite of its fundamental influence on the structure and theory of the current system. For instance the chapter on Prabandhas in the Caturdaṇḍīprakāśikā seems to be clearly out of date at present. In the reckoning of the Śrutis of the Svaras occurring in various rāgas there is a difference (though it is slight) between contemporary ideas and those of Veṅkaṭamakhin. Again in the names of the rāgas and meḷas the difference noted above recurs: this is not a serious difference and except for the fact that Veṅkaṭamakhin's names for several rāgas have now been superseded by other well-known names, and the conse-

quent confusion in the nomenclature of rāgas, this might be passed over. Because, the substance of the most popular of the rāgas of those times still remains; but this substance seems to have been much improved upon. This is inevitable in this art which is always being modified according to taste and genius, and its progress cannot be chained to a particular date or individual. And nearly three hundred years after Veṅkaṭamakhin, the art is not exactly the same as it then was. We have to make allowance for the influence of lakṣya. Even within the space of a century Bilahari is known to have changed the use of PDNS as a phrase into PDS. There are several instances where by the strength of usage a rāga has shed off phrases sanctioned by text and adopted new phrases popularised by practice. We find at the beginning of the 19th century the meḷakartās and a large number of janya-rāgas being widely recognised by names which do not agree with those given by Veṅkaṭamakhin. Songs were composed in the 72 scales by Tyāgarāja and Dīkṣita, but they seem to have differed in the use of the vivādisvaras.[1] A complete system of deriving Janyarāgas from the 72 scales by the different combinations of Ṣāḍava, Auḍava, Sampūrṇa and Vakra groupings resulting in thousands of rāgas seems to have been understood. Tyāgarāja contributed new rāgas which were creations of his genius to the stock of accepted rāgas. Both he and Dīkṣita made use of Northern rāgas also in composition. The list of new rāgas has been increasing by the contribution of various composers down to the present day. In the book called "Samgīta Śāstra Samkṣepa" all the well-known rāgas of Tyāgarāja's songs have been defined in ślokas and illustrated by gītas. The treatment of many rāga-sañcāras and of the śrutis assigned to the rāgas found in this book differs sharply from that of Veṅkaṭamakhin,

1. For a discussion of this problem, see my article "Meḷakartā Rāgas in practice" in the Journal of the Music Academy, Vol. III.

though it is seen to correspond on the whole to current usage. But it seems that a wider view will have to be taken of the practical application of śrutis in rāgas as is shown in the chapter on "Śrutis and Svaras".

A chief factor in the transformation that has been taking place in the form of several of the rāgas even within the period of the previous generation is the Deśīya mode of rendering which commonly resorts to the use of notes which impart a catchy air to a particular rāga but are alien to the spirit of its construction. This tendency has been strongly criticised by Vidvān K. Varadachariar Avl., Lecturer in Indian Music, The University of Madras, in the Presidential Address delivered by him at the Music Conference held in 1932 by the Madras Music Academy. In it he observed, "I believe that except in Mukhāri and Bhairavī the foreign note is a trespasser. While long prescriptive rights cannot be ignored, it is up to us to prevent further intrusion. If a courageous stand is not taken to prevent future encroachment, the processes of attenuation and dilution will destroy the form and beauty of our rāgas". This authoritative statement not only utters a warning against Deśī encroachment of our rāgas, but also suggests the method of interpreting and defining the lakṣaṇa of the term 'Deśī'.

The conclusion mentioned above raises up the question whether our music is Deśī or Mārga. Rāmāmātya derives all the Deśī rāgas from the Sa-grāma, and so do all those that came after him. Veṅkaṭamakhin says that the Ma-grāma does not seem to exist and admits the existence of only the Sa-grāma. All the Deśī rāgas are assumed by him to originate from this grāma.[1] If

1. अस्माभिर्मध्यमग्रामोऽप्यसत्प्राय इतीर्यते ।
तथा हि मध्यमग्रामे त्रिश्रुतिः पञ्चमः खलु ॥
वराळीमध्यमो जातः स पुनर्लक्ष्यमार्गतः ।

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this is so, how could there be a conflict in making the Deśī character of Deśī Rāgas pronounced? Śārṅgadeva has defined "Mārga" music as that discovered (Simhabhūpāla interprets 'Mārgita' as 'Dṛṣṭa') by the Creator, etc., and used by Bharata and others in the presence of Śiva; and Deśī as that which charms the heart of the people in different countries. The latter is plain; it means the moulding of a song in any manner which is sweet, guided by popular fancy; it is not bound by any hard and fast rules of definition. There is a view that Mārga means Vedic music and Deśī, modern music.[1] This does not seem to be quite acceptable. By Mārga the Sāmaveda and Vedic music alone is not meant, because Śārṅgadeva says immediately after his definition of Mārga and Deśī that the Creator evolved this (meaning 'lay') music from the Sāmaveda: Bharata, who used this music in the presence of God, did not deal with Vedic but with secular music. In the Prakīrṇaka Adhyāya of the

---

* * *

एक एव ततः षड्जग्राम इत्यवधार्यते । स्वरप्रकरणम्
रागास्तावद्दशविधा भरताद्यैरुदीरिताः ॥
ग्रामरागश्चोपरागा रागा भाषाविभाषिकाः ।
तथैवान्तरभाषाख्या रागाङ्गाख्यास्ततः परम् ॥
भाषाङ्गानि क्रियाङ्गानि ह्युपाङ्गानीति च क्रमात् ।
दशस्वेतेषु रागेषु ग्रामरागादयः पुनः ॥
रागास्त्वन्तरभाषान्ता मार्गरागा भवन्ति षट् ।
ततो गन्धर्वलोकेन प्रयोज्यास्ते व्यवस्थिताः ॥
तस्माद्रागाङ्गभाषाङ्गक्रियाङ्गोपाङ्गसंज्ञिताः ।
रागाश्चत्वार एवैते देशीरागाः प्रकीर्तिताः ॥
* * * *
ग्रहांशन्यासमन्द्रादिव्यवस्था तेषु यद्यपि ॥
देशीत्वात् सर्वरागेषु नैकान्तेन प्रवर्तते ॥ —रागप्रकरणम्, चतुर्दण्डीप्रकाशिका.

In these lines Veṅkaṭamakhin states that Mārgarāgas are now obsolete and that the current rāgas are all Deśī and therefore belong to the Ṣaḍja grāma.

1. This is expressed by Mr. M. S. Rāmasvamy Aiyar in the introduction to his edition of the Svaramela Kalānidhi, pp. LXIX and LXXIII.

Saṅgītaratnākara, Śārṅgadeva says that he will deal with the Deśī and Mārga lakṣaṇas of the topics there dealt with, and his subject-matter is lay music. In the Prabandha Adhyāya, Śārṅgadeva makes it plainer that by Mārga he does not refer to Vedic music. He says Gāndharva is mārga music. This is explained by Kallinātha to mean that its tradition is very ancient, and that its origin is unknown like that of the Vedas. As contrasted with Gāndharva, Gāna, is Deśī. Kallinātha says that Gāndharva includes all the melodies from Jātis to antarabhāṣās. This defines in indubitable language what Śārṅgadeva and his commentator understood by Mārga.[1]

In the Vādyādhyāya, Śārṅgadeva says that the form of Deśī rāgas is chiefly determined by lakṣya. Kallinātha explains that this rule applied to Deśī rāgas like Rāgāṅgas, etc., but not to mārgarāgas like the grāma rāgas, Śuddha Sādharita, etc. In the same adhyāya, the good flutist is defined to be proficient in Mārga and Deśī rāgas. The Paṭaha is said to be of 2 kinds, mārga and deśī. Surely the Vedas were not chanted to the accompaniment of the Paṭaha and there is no mention of the flute accompanying it either. In the Rāgādhyāya Kallinātha sums up a thorough examination of the development of Deśī music by saying that Deśī rāgas are not bound by rules. The nature of Deśī is that its purpose is the delighting of the mind of the people of each country and it is elaborated according to the will of the singer. Kallinātha quotes Añjaneya to the effect that Deśī rāgas are not bound by rules of Śruti, Svara, Grāma, Jāti, etc., and that they assume various forms in different countries. Kallinātha makes the point absolutely clear by saying that gīta, etc.

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1. In his commentary Kallinātha says:—

"गान्धर्वं मार्गः। गानं तु देशीत्यवगन्तव्यम्। * * *। अनादिसंप्रदायमित्यनेन गान्धर्वस्य वेदवदपौरुषेयत्वमिति सूचितं भवति। गानं तु वाग्गेयकारादिपरतन्त्रत्वात् पौरुषेयमेव। * * * * स्वरगतरागविवेकयोर्जात्याद्यन्तरभावान्तं यदुक्तं तद्गान्धर्वमित्यर्थः॥

(*i.e.* also Vādya and Nṛtya) are deśī if they are elaborated according to the fancy of the artist, and if they are bound by rules they are understood to be mārga.[1] This explains beyond any doubt the sense in which the two terms are to be understood. So it is not a misnomer to say that unwarranted invasions of alien notes or phrases into a rāga are called Deśī prayogas. If a rāga is rendered according to its accepted lakṣaṇa as shaped by the authority of standard compositions and texts, it can be called mārga without doing violence to the term. The task before the artists and theorists of the present day is to preserve the mārga characteristic of our music, lest it should be lost irrecoverably, but this does not preclude Deśī rāgas (meaning by them alien melodies), from being added to the existing stock if they are worthy enough. So long as the current rāgas are rendered according to definite rules they are Mārga.

In the chapters 'Śrutis and Svaras' and the 'Analysis of Rāgas' the number of vibrations of the notes as they occur in practice are given. They can be taken to represent the most common forms of the usage of the notes concerned. I arrived at the figures by a close study of the problem with the help of the sonometer, and I am very grateful to Dr. Paramesvaran and Professor Appa Rao for having kindly provided me with the necessary facilities in the Physics Department of the Presidency College, Madras. The investigation was based on the lakṣaṇa given in the standard compositions and texts mentioned in another chapter.

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1. देशीत्वादेतेषामनियमो न दोषायेति । * * * * । तथा चाहाञ्जनेयः—

"येषां श्रुतिस्वरग्रामजात्यादिनियमो न हि ।
नानादेशगतिच्छाया देशीरागास्तु ते स्मृताः ॥" इति ।

एवं वाद्यनृत्तयोरपि कामचारप्रवर्तितयोर्देशीत्वमवगन्तव्यम् । नियमे तु सति तेषां मार्गत्वमेव, यो मार्गित इत्यादिनोक्तत्वात् ॥

—Commentary on the Rāgavivekādhyāya.

CHAPTER II.

Śrutis and Svaras.

The most striking quality of Indian music is the very large use of microtones and a study of how these intervals came to be adopted serves to explain many features which are of fundamental importance to our music. All our theorists are agreed that Brahmā, the Creator evolved music out of the Sāmaveda which forms "some of the oldest music of which there is any record". This is more than a mythological conceit for it is possible to trace the origin of several aspects of our music to the Sāmaveda. First, if we take the musical intervals which by evolution have undergone change and development continuously till the present day, we are able to recognise them in the accents used in the Ṛgveda, the Yajurveda and in the music of the Sāmaveda. We find that already during the Vedic period music had developed considerably and reached a comparatively high level of development, as is made evident for example in the Medhaprakaraṇa of the Taittirīya Brāhmaṇa by references to Sūta, Śailūṣa, Vīṇāvāda, Gaṇaka, Tūṇavadhma, Śaṅkhadhma, etc. Theory had also received attention during the Vedic period and it is possible to infer that the intervals used in the chant of the Vedas were adopted from lay-music and that they are representative of the latter. Mataṅga and others say that the Svaras were taken out of the Sāmaveda. Even if it is held that the Vedic music was at the starting point of the development of lay-music a study of the notes used in it is not without value.

'Udātta', 'Anudātta', 'Svarita', and 'Pracaya' are the names of the earliest notes and the Prātiśākhyas assign

values to them only with reference to the intervals of the Sāmaveda. According to Mr. Seshagiri Sastri there are three svaras or accents in the Vedas, namely, the Udātta, 'acute', the Anudātta, 'grave', and the Svarita, 'toned'. He says that on the piano the Udātta is represented by C, the two sounds of the Anudātta by B and G, and the Svarita by C sharp (or śuddha ṛṣabha). According to him the pracaya svara as in vogue in the Taittirīya Śākhā and the Ṛgveda is identical with the Udātta. A long svarita in the Ṛgveda is split into two long sounds, the first of which is sounded as Udātta and the second as Svarita. When more than one Anudātta precede an Udātta all but the last are often sounded lower. These are illustrated by the following example:—

N	s	S	R	S	n	S	r	S	N	S	r
Ag	ni	mī	—	ḷe	pu	ro	hi	tam	yaj	ñas	ya
Ṅ	s	N	s	S	R	S	S	R	S	S	n
de	va	nṛt	tvi	jam	—	ho	tā	—	ram	raṭ	na
R	r	S									
Dhā	ta	mam	—	Ṛgveda.							
P	p	N	S	N	s	S	R	N			
Co	da	yi	trī	sū	nṛ	tā	—	nām	—	Ibid.	

Mr. Seshagiri Sastri points out that the system noted above is not scientific, that it differs between provinces and that the notes are used contrary to definition. We have to note that though the above rendering is in agreement with the specimens given by Messrs. Haug and Fox-Strangways, it is possible to discriminate them even more closely. In the above instance the three notes N, S and R differ by a semitone each. But very often, if not always, N is separated from S by 4 śrutis and S from R by 3 śrutis.

Making allowance for the passage of time since the Vedic age, and current provincial differences, I consider this to be a fact of very great importance. I have verified its truth by hearing the passages in question chanted by

various distinguished professors of the Vedas. These two intervals I consider to be at the root of Vedic music and the subsequent development of Indian music till the present day. The other intervals are easily deduced:— P and S stand a fourth apart; P is separated from N by 6 śrutis nearly, to use the terminology of current theory. We can also assume that the so-called Svarita was differentiated from the Udātta by the interval of a semi-tone, *i.e.*, 2 śrutis. My argument for the two-, three-, and four-śruti intervals as the basic intervals is supported by the statement of Mr. Fox-Strangways that he heard the Yajurveda recited on the notes D, E, F and also on D, E and F sharp. As regards Dr. Felber's specimens of the Yajurveda showing a compass of a 4th, 5th and 6th, the first is ordinarily met with, the second is not an exact 5th but a śruti less, and the third is rare if not altogether absent.

We will see that the intervals noted above are clearly perceptible in the Sāmagāna, in spite of contradictions between theory and practice and differences between recensions. It is said by Mr. Fox-Strangways that the scale consisted of only 5 notes for a considerable time, increased subsequently to 6 by the addition of kruṣṭa and that a seventh note was tentatively admitted in the atisvārya. Whatever be the truth of this order of development we must note that the Ṛkprātiśākhya mentions 7 svaras which occur in the Sāmans, their sharp and flat variations, and both the author of the Nārada Śikṣā and Sāyaṇācārya each in his own way relate the notes of the Sāman scale with the 7 notes of the gamut of lay-music. Thus it is clear that even during the Vedic period the correspondence between the notes of the Sāman scale and of lay-music was perceived and theoretically analysed. Mr. S. Sankaranarayana Aiyar, in a learned article in Vol. IV of the Journal of the Music Academy, has pointed out the fundamental difficulty in appraising the value of

the Sāman notes, *viz.*, the śruti values for the notes have not been hitherto explained by any commentator. Added to this are inconsistencies between practice and theory and differences in practice owing to the existence of different schools. For example, three readings of the same Sāman (kindly rendered in notation for me by Mr. Sankaranarayana Aiyar) are given below:—

O gnā i — Ā yā hi — vo i to yā i — to yā — i
A — N D s — S R Ss — G r Gr GR s — Gr Gr s
B — G G g — P P Pm — D d DD Pp — DDPP.
C — S S s — G G Gr — M m M M Gg — M M Gg

Gṛ ṇā noha — vyadā to yā i — to yāi — Nāi ho tā sā
A — g G RS — sGr Gr Grs — Gr GRS Gg Rs Gr GRs
B — d D Pp — p D D D P p — D D Pp — Dd P D D Pm
C — m M Gg — g M M M G g — M M G g — MmGMMgr

Tsā. i. bā .. Au ho vā — rhī .. ṣī
A — G RS NSSN sn r sn ND — NSS N N d.
B — D Pp M P M G R R R — M M M G R
C — M G R G R S D D D — R G R S D

Here A represents the method of singing adopted by the majority in Tanjore and Tinnevelly Districts. This has neither textual nor theoretical sanction. Ga being Kruṣṭa and Ma atisvārya, the only authority on which this is based is tradition. B is according to Sāyaṇa's interpretation, and has been advocated by the school founded by Kṛṣṇasvāmi Śrautin of Varahur. This is confined to one sect, and when I listened to this mode, gave me the impression of belonging to Harikāmbhoji Meḷa; C is according to the Nārada Śikṣā. This is not sung in practice; even theoretically the allocation of srutis according to the Śikṣā does not agree with the śrutis of Bharata and others. Amid this confusion, one has to agree with the statement made by R. Simon in the introduction to his edition of the Puṣpasūtra that to the singers of the Sāmaveda the relation of the tones to one another was important in the first place and only in the second place the tones themselves. He very truly

observes that to suppose the tones of a scale thus built is in accordance with our twelve-note system would amount to trusting in chance too much and making things easier than they are. Nevertheless it seems that, in the face of the conflicting theories of the texts, we have to rely on what has been retained according to tradition. If we remember that the Ṛkprātiśākhya distinguishes between the 3 registers of the human voice, between the grave and acute varieties of the 7 yamas or svaras, and that the grāmas are mentioned in such an old book as the Mahābhārata, we are enabled to evaluate the Sāman scale with a negligible margin of error. Mr. Fox-Strangways rightly says that the highly elaborate system of the grāmas may be dated back beyond the time of Aristoxenus to the 5th century B.C. It is to be noted that all our musical theory is derived from the structure of the grāmas, and that it is with reference to the Ṣaḍja grāma, whose notes from S to S are taken to represent the śuddha scale, that the other 2 grāmas are defined. This śuddha scale can be said to be the direct off-shoot of the Sāman scale in secular music. Taking the notes Ni, Sa and Ri into account around which the accents of the Ṛg and Yajurvedas move, and considering the necessary evolution of the 4th, 5th and the octave, the śuddha scale was a necessary development. The current popular rendering of the Sāmaveda, (A), supports this. If according to the Nārada Śikṣā M G R S formed the upper Sāman tetrachord, it was the basic tetrachord of the śuddha scale. The notes were arranged as S R G M and a major tone above the last note a similar tetrachord P D N S was placed completing an octave. This Śuddha scale was fundamentally changed in character by lowering the 5th by an interval which was termed a pramāṇa śruti. The new scale or group of notes was based on the consonance of the Ṣaḍja and the Madhyama as compared with the Ṣaḍja group of notes which was based on the consonance of Ṣaḍja and pañcama. The gāndhāragrāma is men-

tioned in the Mahābhārata, in some of the purāṇas, in the Pañcatantra, in Nānya Deva's Bharata Vārtika, in Nārada's Saṅgīta Makaranda and by Śārṅgadeva. But it is not mentioned by Bharata and is called obsolete by Śārṅgadeva. It is identified with the Sāman scale (which is a downward scale) according to the definition of Nārada Śikṣā which is believed to be a late work. It is to be noted that the Mahābhārata mentions the scale, which is thus a very old grouping of notes. Returning to the main trend of the enquiry, we have reason to infer that the evaluation of the intervals used in the grāmas on the basis of śrutis was first made necessary and possible by the subtle and at the same time fundamental distinction between the two kinds of the fifths used in the Ṣaḍja and the Madhyama grāmas. This distinction was measured by one śruti which clearly distinguished between a three-śruti interval and a four-śruti interval, and which could be easily perceived on the Vīṇā. This instrument should have readily demonstrated the relative sizes of the intervals. After making sure of the pramāṇa śruti which became the unit of measurement, the smallest tones of the scale namely ga and ri should have been known to be equal to two srutis, ri and dha as bigger than either of them by a sruti, and sa, ma and pa being double the value of ga and ni. It may not be possible to indicate the exact order in which the śrutis for the 7 notes of the scale were evaluated but that such evaluation was easily achieved and with remarkable approach to the accuracy of just intervals is a fact. The allocation of 22 śrutis for the 7 notes of the Gamut became an established and fundamental fact in musical theory at an early age in Indian history. This has been accepted by all theorists from Bharata downwards, in all parts of India including the South. It has been claimed that the South developed its arts independently. But by the time of the Śilappadikāram (Circ. 2nd century A.D.) Aryan and Dravadian culture had become inextricably fused together, and the conquest of Rāvaṇa by Agastya

with the aid of music, celebrated in tradition and literature, serves to reveal how much the South was influenced by the North. The references to Saṁgīta in Tamil literature down to the time of Aḍiyārkunallār form additional evidence to prove this point. The Divākara and Śilappadikāra recognise 22 śrutis. The 22 śrutis are defined as dividing the octave equally. Two notes are saṁvādis if they are separated by 12 or 8 śrutis Taking the two definitions into account it is possible to arrive at the value of the notes defined in terms of the śrutis. But in the various attempts which have been made to interpret the notes, the method of dividing the vibrating string in different ways and measuring the resulting vibrations has been differently applied and very conflicting ratios have been given for the intervals of the notes of Hindu music.[1] Mr. P. R. Bhandarkar is of the opinion that quite probably the expression of Hindu scale in terms of 22 śrutis is only an approximation and supports this position ably in the course of a series of closely reasoned articles in the 'Indian Antiquary' for 1912. Comparing the values of a major tone of 4 śrutis, a minor third of 5 śrutis, a just 4th of 9 śrutis, and a just 5th of 13 śrutis with the values given by the cycle of 22 śrutis, he comes to the conclusion that this system is capable of introducing an error of as many as 21 cents, or nearly a comma in expressing the minor third. The error of the other intervals is negligible. He points out the inherent inability of all systems to express accurately the so-called natural scale unless the octave is subdivided into a very large number of degrees. To express the value of the Śuddha scale he considers the capacity of cycles of 22, 29, 32, 34, 41, 46 and 53. degrees and concludes that though the cycle of 53 can express it with remarkable accuracy, the cycle of 22 is the smallest that can be used for expressing the given scale. The cycle of 24 śrutis is

1. *Vide* Abraham Paṇḍitar's Karuṇāmṛtha Sāgara for brief discussions of several methods of this kind.

rejected because it would be accurate if the 3 śruti interval were the same as a 3|4 tone, which it is not.

Many attempts have been made at different periods in history to discover a perfect scale. It is interesting to note that for purposes of harmony the extent of a perfect scale is fixed at 72 tones to the octave which can be reduced to 48 or 45 tones. Thomson's enharmonic organ has 40 tones to the octave and Poole's organ 50 tones. It has also been thought possible to reduce all music to 27 or 24 tones to the octave. The possibility of dividing the octave into as many intervals as are required either for the requirements of harmony or melody becomes evident and seems justified when we note the following statement:— "As organs, harpsichords and pianofortes with 14, 16, 17, 19, 21, 22 and 24, tones to the octave have been actually constructed and used the condition of having 12 tones and no more does not seem to be inevitable." Various cycles of tones have been proposed with the aim of expressing all possible tones by a limited number of intervals. It has been said that the condition of forming a cycle is not properly speaking harmonic or melodic, but that it is arithmetic. The following are some famous cycles:— Cycles of 118, 93, 81, 77, 74, 69, 67, 65, 57, 55, 50, 53, 45, 43, 31, 26, 19, and 12 degrees. To return to the śruti system, Mr. M. Bosanquet after elaborately analysing it arrives at the following conclusion:—"The system of 22 possesses remarkable properties. It has both 5ths and 3rds considerably better than any other cyclical system having so low a number of notes. The only objection as far as the concords go to its practical employment for our own purposes lies in the 5ths. These lie just beyond the limit of what is tolerable in the case of instruments with continuous tones. For the purposes of the Hindoos where no stress is laid on harmony the system is already so perfect that improvement could hardly be expected". It is interesting to see how the octave has been divided at

various times and by different theorists into different cycles. The following figures of degrees give an idea of some prominent cycles:—30103, 3010, 301, 118, 93, 81, 77, 74, 69, 67, 65, 57, 55, 53, 50, 45, 43, 31, 26, 19 and 12.

In trying to evaluate the śrutis and svaras as they developed from early times to the present day we have to remember that the concept of ratios of musical intervals as established according to modern physics was not known in all its details to the ancients whose attempts to express the microtonal intervals were only approximate, as has been established beyond doubt by research, but which succeeded marvellously in giving as accurate an idea of them as possible with the means at their command. Various attempts have been made to give the value of Vedic svaras but though it is true that our notes took their rise from Vedic chant their śruti values were not explained clearly in the Śikṣās as has been observed already. Hence the different values which have been assigned to Vedic svaras cannot be accepted as final. But it is possible to see in the chant of the Sāmaveda that the melody centres round G (flat) R (three śrutis) S, N (flat), and D (sharp) in the majority of the Sāmans, and M is added as kruṣṭa at the upper end and P as atisvārya at the lower extremity where there are 7 notes in the Sāman. But the intervals seemed to have been intoned with considerable freedom, the notes partaking very much the nature of those of the Śuddha scale of lay-music, and kruṣṭa and atisvārya especially treated freely within limits set by the melody. The latter two might not have conformed to their corresponding notes in the secular śuddha scale but that the śuddha scale was a rearrangement of the Sāman notes is an acceptable proposition. When the grammar of music was being written we find the theory fairly well developed. The Ṛkprātiśākhya mentions the three octaves, each containing seven notes, and distinguishes between one group of notes without intervening intervals

(probably the śuddha scale which was being formed) and another group of yamas distinct from these notes. These yamas are grouped as soft and sharp (which can be taken as referring to vikṛta notes).

The problem of identifying the śrutis is bound up with the music of the grāma system which was in vogue till the time of Śārṅgadeva after whom only the Ṣaḍjagrāma survived. Bharata describes the Ṣaḍjagrāma and Madhyamagrāma and the experiment of the Dhruva and Cala Vīṇās. Bharata is very short in his treatment of the subject and does not mention many details regarding the śrutis like the description of their names, families, castes, etc. He does not define the grāma but he describes the constitution of the Sa and Ma grāmas; but he and other writers who deal with the grāmas are agreed about the fundamental aspects of the system, though here and there they might have differed with regard to petty details like the names of the śrutis, etc. So the Saṅgīta Ratnākara's definition can be taken as representative of the theory of the grāma and of śrutis as comprehended in it. The Ratnākara very clearly shows the assignment of śrutis on the experimental Vīṇā[1]. Sa is fixed on the fourth string, Ri on the 7th, Ga on the 9th, Ma on the 13th, Pa on the 15th, Dha on the 20th, and Ni on the 22nd. This gives the values of the Śuddha scale indubitably and this clearly shows the mistake committed by a host of writers including Sir Wm. Jones, Ousley, Paterson, Stafford, Willard, French, Carl Engel, S. M. Tagore, Grosset, Day, etc., when they defined S to R as four śrutis, R to G as

1. वीणाद्वये स्वराः स्थाप्यास्तत्र षड्जश्चतुःश्रुतः ॥
स्थाप्यस्तन्त्र्यां तुरीयायाम् ऋषभस्त्रिश्रुतिस्ततः ॥
पञ्चमीतस्तृतीयायां गान्धारो द्विश्रुतिस्ततः ॥
अष्टमीतो द्वितीयायां मध्यमोऽथ चतुःश्रुतिः ॥
दशमीतश्चतुर्थ्यां स्याद् पञ्चमोऽथ चतुःश्रुतिः ॥
चतुर्दशीतस्तुर्यायां धैवतस्त्रिश्रुतिस्ततः ॥
अष्टादशात्तृतीयायां निषादो द्विश्रुतिस्ततः ॥
—Svarādhyāya, S. R. (Saṅgīta Ratnākara)

three śrutis and so on. Mr. Fox-Strangways also accepts this wrong allocation of the śrutis in the face of the texts and practice and is therefore led into a series of errors. The Vikṛta notes recognised by Śārṅgadeva are Acyuta Sa (the fourth śruti), Vikṛta Ri (seventh), Sādhāraṇa Ga (tenth), Antara Ga (eleventh), Cyuta Ma (eleventh), Acyuta Ma (thirteenth), Vikṛta or Kaiśika Pa (sixteenth), Vikṛta Dha (twentieth), Kaiśika Ni (first), Kākalī Ni (second) and Cyuta Sa (third). We find that almost all the Indian authors accept 22 śrutis for the octave, and Nārada differs only in naming them. He defines the Gāndhāra grāma in addition to the 2 other grāmas. The value of the śuddha scale is accepted as the same by all. In the Aumāpata the treatment of the subject is singular. Though the 7 svaras and 22 śrutis are mentioned the infinite nature of the possibility of musical intervals becomes the keynote of the treatment of the work which enumerates systems with aṣtounding numbers of svaras, śrutis and so forth.

In the definition of svara and śruti much ingenious discussion is used. The svara is defined as the smooth charming, and continuous sound, originating after the śrutis, which pleases the listener by its own virtue.[1] Simhabhūpāla comments on this verse elaborately. He points out that some are inclined to think that there is no difference between the svara and the śruti, since both of them are heard by the ear. He quotes the different kinds of relationship between the śruti and svara as propounded by various authors, *e.g.*, he says that some think that the notes are reflected in the śrutis as the face is in the mirror; others that svaras are made of śrutis as the jar is of clay; some others think that svaras are got by the transformation of śrutis as curd from milk and so forth.

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1. श्रुत्यनन्तरभावी यः स्निग्धोऽनुरणनात्मकः ।
स्वतो रञ्जयति श्रोतृचित्तं स स्वर उच्यते ॥
—*Ibid.*

The essence of these views seems to be that among micro-tones, the notes assume those which are required. In this condition they are recognised as the distinct notes of a scale. The svara is defined by Mataṅga as that which shines by itself. The names of the notes have been explained by different writers old and modern, so as to give them meaning and to justify their nomenclature, and most of these attempts seem far-fetched. Kallināṭha also writes an elaborate commentary on the question of śrutis and svaras. According to him the śrutis are so called because they are audible. He says that in his view śrutis are of one kind because they form a natural phenomenon (the manifestation of which is described by him in his own way)[1]. This is an intelligent view. Kallināṭha then gives the opinions of different schools, as follows:—Some think that śrutis are of two kinds according to śuddha and vikṛtaśrutis. Viśvāvasu is of this opinion. Others hold that they are of 3 kinds because they occur in the 3 octaves or according to the 3 guṇas; or of 4 kinds according to vāta, pitta, etc. (Tumburu is quoted to support this.) Vena and other Ṛṣis believe that śrutis are of 9 kinds, *viz.*, Dviśruti, Triśruti and Catuśśruti, which occur in svaras. Kohaḷa is quoted as saying that some think that there are 22 śrutis, according to others there are 66 and others think that they are innumerable.[2] Regarding the nature of the origin of the svaras from the śrutis, five different views are given by Kallināṭha, who condemns all except the pariṇāma view and abhivyakti view since they are accepted by Mataṅga and others.

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1. श्रूयन्त इति श्रुतयः । सा चैका अनेका वा । एकैव श्रुतिरिति । तथा—तत्रादौ तावदिहाकाशपवनसंयोगात्पुरुषप्रयत्नप्रेरितो ध्वनिर्नाभेरूर्ध्वमाकाशादेशमाक्रमत धू (मन्धू) ? मवत् सोपानपदावस्थानं पवनेच्छयारोहन्नन्तर्भूतपूरणप्रत्ययार्थतया चतुःश्रुत्यादिभेदभिन्नः प्रतिभासत इति मामकीयं मतम् । —Kallināṭha, Svarādhyāya, S. R.

2. तथा चाह कोहलः—

द्वाविंशतिं केचिदुदाहरन्ति श्रुतीः श्रुतिज्ञानविचारदक्षाः ।
षट्षष्टिभिन्नाः खलु केचिदासामानन्त्यमेव प्रतिपादयन्ति ॥ —*Ibid.*

If we enquire about the notes that were used in the music of the jātis, we find that every śruti except the 5th, 6th, 8th, 14th, 15th, 18th, 19th and 21st was used. (This reckoning omits the consideration of the gāndhāra grāma since it was only theoretical). Inquiring into the sizes of the intervals used, we find the following were commonly employed:—

Catuśśruti (Kākalī Ni, Vikṛta Da, Kaiśika Pa, Antara Ga and Vikṛta Ri), Triśruti (Kaiśika Ni, Triśruti Pa, Sādhāraṇa Ga), and Dviśruti (Acyuta Ma, Cyuta Ma, Acyuta and Cyuta Sa). The śuddha examples for the 3 intervals are well-known. In the mūrchanas we find these three intervals occurring in different combinations.

Before leaving behind the age of grāma music, we should inquire whether it has left any impression on the music of the present day. We find that every writer down to the present day makes some reference to the grāmas and in Saṅgīta literature it is accepted universally that the śuddha scale is the contribution of the sa-grāma starting on ṣadja as it does. The old writers down to Śārṅgadeva make the discussion of śruti, svara, tāna, mūrchana, jāti, etc., in fact that entire structure of melody known to them centre round the grāmas. Mr. Fox-Strangways says that the Sa-grāma is the western major with the sharpened sixth. In this he is clearly wrong because the śrutis are definitely assigned different numbers in the scale of the 22 śrutis and he is again wrong in calling the Ma-grāma as being equal to the major (C), whereas it is really akin to Harikāmbhoji meḷa if it is taken as starting from Ma. His definition of the Gāndhāra grāma also is not acceptable because he derives it in two ways (one from the Sa-grāma and another from Ma-grāma in reckoning both of which he differs from tradition and text as has been observed). According to him the three grāmas differ in their fourths, namely, the

fourth of the gāndhāragrāma is Ma tīvra and the fourth of the madhyamagrāma tīvratara while that of Sa-grāma is śuddha. The Ga-grāma derived from the madhyama-grāma has a perfect fourth but this is admitted by Mr. Fox-Strangways to be a mode of Sa-grāma and not a distinct grāma.

Kallinātha's commentary throws light on many problems concerning grāma music. He asks why two notes, namely, Sa and Ma should be associated with grāmas in the world and why not the others. He answers that it is so because of the authority of the Ṛṣis (that is tradition) and also because of the employment of 2 kinds of svaras, *viz.*, the śuddha and the vikṛta. He explains by saying that the śudda notes are found in the Sa-grāma and the vikṛta notes in the Ma-grāma. This is an intelligent analysis making it plain that since all the notes śuddha and vikṛta were obtained in the two grāmas there was no need for the formulation of other grāmas. The Ga-grāma was taken on all hands to be obsolete. Kallinātha further states that Ṣaḍja being a prominent note, is used to form a grāma and also because in this scale consonant (saṁvādi) intervals abound. Ma is important because it is never omitted in the tānas, and Ga is born in their race and so shines in heaven. But another answer is possible for this question, which incidentally also points out the error into which some modern writers have been led when they make scales out of the saptakas starting from each note of the Sa-grāma and arrive at seven different grāmas as they call them. For instance, Mr. B. Svarup in his 'Theory of Indian Music' says that out of the different grāmas except the three well-known grāmas, Ni-grāma was almost like the Ga-grāma, Ri and Dha-grāmas were similar except for the position of Ma and Ni, and Pa-grāma resembled almost the Sa-grāma. A similar account is given by some South Indian writers also. But this explanation ignores a vital aspect of the

problem. It must be understood that a grāma means the construction of a scale or group of notes with a definite and distinct allocation of śruti intervals. (The notes of a grāma cover a full octave). The Sa, Ma and Ga-grāmas are constituted into distinct scales or groups of notes with śrutis allocated, we might say, arbitrarily, if they were not based on tradition, in definite and clearly distinguished sequence. But to constitute the mūrchanās of the Sa-grāma into grāmas is a travesty of the term grāma, as understood in classical theory and would simply amount to the creation of scales which are derived one from another and which would never yield the well-known Ma and Ga-grāmas. The so-called grāmas formed out of the mūrchanās of the Sa-grāma have to be distinguished from the three well-known grāmas which represent three distinct genera and three original modes of tuning.

Mr. Fox-Strangways says: "The theory of grāma has remained barren. It is true that the system of the Karnatic music is arranged in accordance with it and that the musicians of Hindustan hold it as a pious belief". He goes on to say that the musical science of the South is over-elaborated and that the North has followed a different system of classification. We must inquire about the truth of these remarks and see if the music of the grāmas has not made any real contribution to our system. We know that the śuddha scale of those times is still accepted as our śuddha scale. Secondly the two-, three- and four-śruti intervals of the grāmas form important features of our present system. And the classification of melodies, even after Śārṅgadeva, in many places has been according to grāma, jāti, mūrchanā, etc.[1] Mr. Fox-

1. To give only a few examples, Ahobala, Basava, the authors of the Saṅgīta Nārāyaṇa and the Saṅgīta Saraṇi and Tuḷaja refer to the jāti or mūrchanā of the rāgas treated by them. The number of such references varies according to the writer. It is interesting to note that Veṅkaṭamakhin describes Bhūpāla as being reckoned among Rāgāṅgarāgas by Śārṅgadeva and Kāmbhoji as being classed under Kriyāṅgas by Bharata and others.

Strangways is right when he states: "Bharata's is the North Indian theory of grāma, though, as we have seen, it touches the South Indian theory also in one point, *viz.*, the division of the Rāga into two classes, those which have the fourth and the tritone respectively for basic intervals". But though the classification of modern Karnatic scales has been thus influenced by the grāmas it is not quite in the same manner as Mr. Fox-Strangways conceives it. It is not by the divergence of the fourth but of the fifth that the grāmas have established the distinction between the two main groups of our rāgas. And it is the Vikṛtapañcama of the Madhyama-grāma that slowly evolved into the modern Pratimadhyama, as we may gather from the evidence in the works on Karnatic music written after the time of Śārṅgadeva, and this note is responsible for the fundamental division of modern Karnatic scales into two distinct groups.

The Gāndhāragrāma can be breifly disposed of. A great deal of confusion envelopes this grāma since it is not mentioned in some of the most important among the oldest musical works. Nānyadeva mentions this grāma and describes various rāgas under it. Nārada defines it as also Śārṅgadeva, but they refer to it as a scale prevalent in heaven (*i.e.*, obsolete). Ahobala after some centuries defines both this and the Ma-grāma in a way which does not agree with the old definitions and which had no reference to practice.[1] It is not clear with

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1. श्रुतित्रयसमायुक्तो यदा गो मेरुगो भवेत् ॥
गान्धारग्राम आख्यातस्तिसृभिः श्रुतिभिः परे ॥
चतुःश्रुतिर्निषादः स्यात् षड्जोऽपि तिसृभिर्युतः ॥
—Saṅgīta Pārijāta

मध्यमे मेरुसंस्थेऽस्मिन् मध्यमग्रामसंभवः ।
यदा तदैव तास्तिस्रः श्रुतीर्याति स पञ्चमः ॥
निषादं त्रिश्रुतिं तत्र ब्रूयुर्लक्षणकोविदाः ।
अन्ये तु श्रुतिभिर्युक्ताः सग्रामस्थस्वरा इव ॥ —*Ibid*

Cf. the definitions of the 2 grāmas in the Saṅgīta Ratnākara.

reference to which grāma the Ga-grāma was derived. In the absence of specific directions, it is not improper to assume that the śuddha scale of the Sa-grāma might have been taken as the norm. But the scale has been interpreted by recent writers in different ways. For instance Mr. Fox-Strangways derives two varieties of the Ga-grāma from the Sa-grāma and the Ma-grāma. (He associates the Sāman scale with the latter derivative). Mr. M. S. Ramaswami Aiyar in the introduction to his edition of the Rāgavibodha, besides quoting the variety of the Ga-grāma derived from Sa-grāma by Fox-Strangways, gives two derivations according to the theoretical and practical variations, as he calls them, of the Ma-grāma. Without entering into the question of the validity of these inferences, we easily see the uncertainty prevailing about the exact nature of the Gāndhāragrāma, which is confounded by the definition of this grāma by such a recent authority as Ahobala. So any inference based upon the unidentified Gāndhāragrāma cannot be regarded as valid. Hence, the statement of Mr. Ramaswami Aiyar in the same introduction that the two grāmas of Ga and Ma are living entities sung in South India needs analysis. His argument is that though the two grāmas must be deemed to have been still-born, notwithstanding the elaborate way in which they were verbally dealt with, yet they are sung even to-day by the Sāman chanters. I have to differ from his premises and conclusions. His view that the primal Sāmika was GRS is doubtful because in Vedic music it is the intervals that count and not the Svaras, according to the leading authorities on the subject, and so to name the Svara progression of the Sāmika is not correct. Secondly, to say that the vocal scale of the Sāmagāna proceeded in descent from the Gāndhāra of the upper register is also not correct. Because, even Nārada who says the Prathama Svara of the Sāmaveda began on Ga does not give the order of the Sāman scale of 5 Svaras as G, R, S, N, D, as Mr. Aiyar does. In fact, Nārada's

order of the progression is a stumbling-block.[1] Then there is the rival school of Sāyaṇa[2] and also conflicting tradition and practice which make the equation of the Sāman and Gāndharva Svaras well-nigh impossible. Added to this is the lack of any tangible mention of the śruti values of the notes of the Sāmans. All these conditions stand in the way of any generalisation regarding the Sāman scale. So the statement of Mr. Aiyar that each of the 3-Svara scale and 5-Svara scale began with Ga and that both the scales or perhaps the latter scale got the name of Gāndhāra-grāma (which, as we saw, is variously defined) is based upon two uncertainties. But Mr. Aiyar proceeds to state that when Ma and Pa were added to this pentatonic scale to form the heptatonic one, *viz.*, M, G, R, S, N, D, P, and since this began with Ma, it naturally was named the Madhyama-grāma. He seems to base this inference on pure conjecture. He is not only going against text and tradition, which derive the grāmas and distinguish between them in an entirely different manner, but is contradicting himself. If the 3-Svara scale or 5-Svara scale later got the name of Gāndhāra-grāma, it must have been in the form of a saptaka to be called a grāma. The nucleus might have consisted of 5 Svaras but the developed Ga-grāma scale must have been, and was a heptatonic scale. According to Mr. Aiyar this heptatonic scale was of the form M, G, R, S, N, D, P, (which is not quite right). This scale according to him was called the Madhyama-grāma

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1. यः सामगानां प्रथमः स वेणोर्मध्यमस्वरः ।
यो द्वितीयः स गान्धारः तृतीयस्त्वृषभः स्मृतः ॥
चतुर्थः षड्ज इत्याहुः पञ्चमो धैवतो भवेत् ।
षष्ठो निषादो विज्ञेयः सप्तमः पञ्चमः स्मृतः ॥ —नारदशिक्षा ॥

2. लौकिके ये निषादादयः सप्त स्वराः प्रसिद्धाः त एव साम्नि कुष्टादयः सप्त स्वरा भवन्ति । तद्यथा—यो निषादः स कुष्टः, धैवतः प्रथमः, पञ्चमः द्वितीयः, मध्यमस्तृतीयः, गान्धारश्चतुर्थः, ऋषभो मन्द्रः, षड्जोऽतिस्वार्य इति ॥ सायणाचार्याः ।

because it started with Ma. But obviously the same scale cannot be called by 2 different names like the Ga-grāma and Ma-grāma which mean two entirely different scales. Ga-grāma is well-known as a peg for ancient and modern theorists to hang their own theories upon, because it was and is an obsolete scale for centuries. Nārada and others who wrote on the music of the Sāmaveda can be trusted to have compared their theme with the theory of lay music and it is not wrong to assume that they would not have failed to mention the parallelism between the Sāman scale and the Gāndhāra-grāma if they found any. We can also rightly assume that when an author speaks about a problem without any qualification he is referring to its aspect which is well-known. So taking Nārada Śikṣā alone we may infer that Nārada may be referring to the Svaras of the Śuddha scale of the Ṣaḍja-grāma. But to believe that he is speaking about the Gāndhāra-grāma Svaras is to trust conjecture too much. Hence the conclusions of Mr. Aiyar that the Ga-grāma was the earliest and the Ma-grāma (according to his conception) the second to appear in music, that with the growth of secular music and the Sa-grāma the other 2 grāmas (according to him) along with the Sāmagāna were driven into the temples, and that while the Sa-grāma flourishes, the other 2 have perished, are not acceptable. It must be understood that the Madhyamagrāma described by Bharata and others has nothing to do with the Sāmagāna, and that it lived along with the Sa-grāma till the epoch of grāma music. After this period, the Vikṛtapañcama of the Ma-grāma became identified with the Tīvra variety of the Madhyama (as all Karnatic theorists after Śārṅgadeva point out). So the Ma-grāma lives now in a modified form and is responsible for the wonderful system of classification that Karnatic music possesses to-day. Also the Ma-grāma had its own contribution to make as regards intervals as we have seen. In the light of what has been said above, it seems best to leave alone the Ga-grāma as

a mode of tuning which was once prevalent, but which was abandoned subsequently owing to its complex intervals, and poverty of Saṁvādis instead of equating it with the Sāman scale.

Before dealing with the Karnatic writers after Śārṅgadeva it must be noted that the Saṅgīta literature in Tamil exerted a most profound influence in shaping Karnatic music as it is known now. The Śilappadikāram, in the light of available Tamil works, occupies in Tamil Saṅgīta literature the same place as the Saṅgīta Ratnākara does in Sanskrit literature. In respect of the number of śrutis (which are taken to be 22) and the consonance of the fourth and fifth, there is remarkable similarity between the Śilappadikāram and the Sanskrit works. But what seems to be an original contribution, the outstanding importance and influence of which is felt to-day as fundamental, is the Tamil division of the octave which is conceived as a cycle divided into 12 equal units.[1] The 5th unit from the starting note is given as the consonance of the fourth and the 7th as that of the fifth. In the cycle of the Vaṭṭappālai, alakus or śrutis are allocated in the follow-

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1. 'ஆயஞ் சதுரங் திரிகோணம் வட்டமெனப்
பாய நான்கும் பாலையாகும்.'
'வட்டமென்பது வகுக்குங் காலை
யோரேழ் தொடுத்த மண்டலமாகும்.'
'சாணளவு கொண்டதொரு வட்டந் தன்மீது
பேணியிருநாலுபெருந்திசைக்—கோணத்
திருகயிறு மேலோட்டி யொன்பாலு மூன்றும்
வருமுறையே மண்டலத்தை வை.'
'எதிரு மிராசி வலமிட மாக
வெதிரா விடமீன மாக—முதிராத
வீராறி ராசிகளா யிட்டடைவே கோக்கவே,
யோரார்த மண்டல மென்றெண்'
—Aḍiyārkkunallār (commentary on Aycciyar Kuravai).

ing manner:—S=4, R=4, G=3, M=2, P=4, D=3, N=2.[1] Mr. Abraham Panditar, who has analysed the Tamil system of music very elaborately in his Karuṇāmṛta Sāgara, is inclined to read these śrutis as S to R=4, R to G=4, etc. According to this allocation of the śrutis, the units or rāśis (the name for the subdivisions) are not equal to one another in the number of śrutis or alakus contained. Mr. Panditar points out that, since 12 intervening śrutis indicate the consonance of the fifth, the pairs R and D and G and N are not consonant because they are separated by 10 and 11 śrutis respectively. (These 2 exceptions to this consonance occur in the theory of the Sanskrit works too).[2] Hence Mr. Panditar attempts to rectify them by adding one śruti each to D and G, making the total number of śrutis into 24. He states that his belief is that males sang to 24 śrutis, and females to 22 śrutis, by reducing one śruti each from 2 Saṁvādis within the octave. In the assignment of 24 śrutis to the octave, there is nothing to support Mr. Panditar except his plea for the consonance of the 2 intervals noted above. But he himself says that though the octave was divided into 24 śrutis, the Tamils employed 22 śrutis in the octave. Also we have to remember that it may be generally true that the small dis-

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1. 'ஏத்துமிடப மலவனுடன் சியங்
கோற்றனுக் கும்பமொடு மீனமிவை—பார்த்துக்
குரன் முதற்ரு மிறுவாய்க் கிடந்த
நிரலேழுஞ் செம்பாலை நேர்.'
'துலநிலைக்குரலுந் தனுநிலைத் துத்தமு
நிலைபெறு கும்பத்து நேர்கைக்கினையு
மீனத் துழையும் விடைநிலத் திளியும்
மானக் கடகத்து மன்னியவிளரியு
மரியிடைத் தாரமு மிணைவுறக் கொளலே.'
குறுத்த நான்கு கிளைமூன்றிரண்டாங்
குரையா வுழையிளி நான்கு—விரையா
விளரி யெனின் மூன்றிரண்டு தாரமெனச் சொன்னர்
களரி சேர் கண்ணுற்றவர்.'
—*Ibid.*

2. In the Śuddha scale (starting on Sa of the Ṣaḍja grāma), Dha and Ga are separated by 10 śrutis, and Pa and Ri by 11 śrutis.

crepancies in consonance were made good in practical singing. The Vaṭṭappālai is said by Mr. Panditar to have employed the 22 śrutis, whereas the Ayappālai consisted of 24 śrutis, both as noted above. His argument against the 22 śrutis is that, besides the incorrect fifths noted above, the Śuddha Madhyama and the Pañcama of the system deviate from perfect intervals by 8 and 7 cents respectively. But we have to see that the ancients had no means of checking these very minute deviations, and besides, they could not achieve such subtle errors even if they wanted to, because they would have naturally been guided by their ears for perfect intervals. The calculation of the errors obtained by trying to cover the śruti intervals of an octave by rotating fifths or fourths among consecutive octaves is a mathematical myth, for these experiments could never have been carried out in the days of the Śilappadikāram or even the Saṅgīta Ratnākara. As Herschal says: "Anyone who should keep on ascending by perfect fifths and descending by octaves or thirds, would soon find his fundamental pitch grow sharper and sharper till he could at last neither sing nor play; and two violin players accompanying each other and arriving at the same note by different intervals, would find a continual want of agreement." Mr. Panditar says that the Trikoṇappālai and the Caturappālai may mean the subdivision of the 24 śrutis into 48 and 96 śrutis respectively. An equal division of the octave is artificial and not necessary for correct or natural singing. But when Mr. Panditar proceeds to identify the Tamil grāmas of notes with the equally tempered scale of modern Europe, he goes farther from truth, and it is not possible to agree with him. His conclusion seems to be wrong even if it is maintained that the minute śruti intervals may be represented by the division of the octave into 48 and 96 equal divisions. The fallacy of his conclusions is rooted in the fact that he thinks that the 22 śruti-system was incorrect in expressing the scale (whereas it was only an approximation and a correct one, as Mr. P. R. Bhandarkar points

out), and that it must be a system of 24 śrutis equally dividing the octave. As against the voluminous details of his arguments, it must be remembered that a correct fifth and fourth are rightly got in any musical system which has any pretensions to development, whatever be the number of units into which the octave is divided under that system. Even otherwise the śrutis occurring in rāgas (according to the different pālais), which he gives are not quite correct, because the śrutis as they occur in practical music during singing cannot be represented by a single figure. This dictum applies to all such figures which have been given by different contemporary writers.

In this connection it is interesting to note some views regarding the real nature of śrutis as they occur in song and as they are calculated on paper. The Rev. Mr. Popley very truly observes: "A song or piece played on an instrument is a live thing and does not submit to mathematical precision. There is, it is true, only one form for each scale, and every singer and musician tries to get it right, though no one invariably manages to do so. The very fact of putting passion (Rasa) into music means that a particular note will be taken rather sharper at one time than another. The law is there of course to be obeyed as perfectly as possible. In South India the use of the term śruti for such a possible sharpening or flattening of particular notes recognises the truth of this variability. Music after all is an art and not a mere mechanism." Criticising Mr. Panditar's adoption of the equal temperament, Mr. Clements says in his "Rāgas of Tanjore", "Where Abraham Panditar and others like him show a lack of imagination is that they do not attempt to realise the conditions regarding scientific knowledge under which the old Pandits lived. Science, needless to say, has not gone backwards during the Christian Era; and caprice or artificiality, such as any kind of equal temperament must be the exception; it cannot be the rule." Elsewhere he puts

the case even more strongly thus:—"Mr. A. Panditar rejects all the ancient theories of the Saṅgīta Ratnākara and Bharata's Nāṭyaśāstra and puts his faith to equal temperament. It seems to us that he does not understand the *raison d'etre* of temperament and its justification. Temperament is necessitated by a system of transposition scales and is intended as the nearest possible approximation to just concord. It is justified by harmony in the modern sense and by that alone. Indian music has no transposition scales and therefore has not the same need for an equal division of the octave. It is not an harmonic system. No Indian musician ever dreamt of tuning Sa and Pa by a tempered fifth or singing other consonant intervals purposely a little out of tune." The conclusion of Mr. Clements that the Indian system revels in a vast number of scales founded on natural intervals is perfectly legitimate.

We find the Śīlappadikāram giving 3 kinds of intervals, namely, the dviśruti, triśruti and catuśśruti intervals.[1] Calculating the Ni of the Tamil śuddha-scale from Ma it is Komal and then the śuddha mela will be Harikāmbhoji. But perhaps assuming that in the cycle of 12 units the śrutis are capable of being interpreted as preceding or succeeding the svaras, Mr. Panditar takes Śaṅkarābharaṇa as the Tamil śuddha-scale. The Tamil division of the octave into 12 rāśis is quite original and epoch making. The present svara system of Karnatic music is based on this division and the meḷakartā system has been formulated roughly on the basis of this division.

After Śārṅgadeva we find that the old order had changed, giving place to a new one. The most outstanding aspect of this change was the fixity given to Sa and espe-

1. Describing the Pālaiyal, Aḍiyārkunallār says:—

"...இசைம்பிற் பாலை பிறக்குமிடத்துக் குரலும் தத்தமும் இளியும் நான்கு மாத்திரை பெறும்; கைக்கிளையும் விளரியும் மூன்று மாத்திரை பெறும்; உழையும் தாரமும் இரண்டு மாத்திரைபெறும்".

cially Pa which directly resulted in the disappearance of the Madhyama-grāma from usage. Kallināṭha makes some important observations concerning changes that had occurred in practice in the course of his commentary on Deśīrāgas in the Rāgādhyāya.[1] He says that rāgās originating in the Madhyama-grāma like Madhyamādi, Toḍi, etc., had ceased to start on the note Ma but started instead on the Madhya-ṣaḍja. According to him, this was one of the differences that had taken place between theory and practice. The next line is very important. Its purport is that the Sāraṇās of notes dependant on the graha-svara and situated above it are absent and *that though the Triśruti Pañcama which marks the difference between the grāmas is used, all rāgas assume the same form,* (i.e., *do not reveal the difference between the grāmas*). This is a very important statement from the pen of the most important among the commentators of Śārṅgadeva. This reveals what a fundamental change was happening in the practice and theory of Indian music at that time. His next statement is no less important; it is that in the Kriyāṅga-rāga, Rāmakriyā, the note Madhyama assumes two śrutis of the note Pañcama. This is again a new thing in history. Hitherto Pañcama has been lowered a

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1. .... इदानीमधुना प्रसिद्धरागाङ्गादीनां लक्ष्ये प्रतीतानां लक्षणविरोधानां परिहारार्थमुद्यमः क्रियते । तत्र विरोधोद्भावनाप्रकारस्तावद्ग्रामद्वयाज्जात्यादिपरम्परयोत्पन्नानामेतेषां रागाणां मध्यमस्थषड्जमध्यस्थानयोरेव तत्तन्मूर्छनारम्भपक्षाश्रयणे शास्त्रविहिते संभवत्यपि मध्यमग्रामोत्पन्नानां मध्यमादितोडिप्रभृतीनां च मध्यमध्यमारम्भं विहाय मध्यषड्जस्थान एवारम्भो लक्ष्यलक्षणविरुद्धः । **तथा ग्रहस्वरायत्तोत्तरस्वरसारणानामभावश्च चित्र-(त्रिच)तुःश्रुतित्वेन ग्रामद्वयभेदकस्य पञ्चमस्यालोप्यत्वेन प्रयुज्यमानस्यापि सर्वरागेष्वेकरूपता** । क्रियाङ्गरामक्रियायां मध्यमस्य पञ्चमश्रुतिद्वयाक्रमणं नट्टदेवक्रीप्रभृतिष्वृषभधैवतयोरन्तरकाकल्यादिमश्रुतिद्वयाक्रमणेन प्रत्येकं पञ्चश्रुतिता च शास्त्रशास्त्राविहिता (?) । श्रीरागे गान्धारनिषादयोर्मध्यमषड्जादिमैकैकश्रुत्याश्रव(क्रम ?)णेन त्रिश्रुतित्वे शास्त्रविहितेऽपि षड्जमध्यमयोरशास्त्रविहितत्रिश्रुतित्वकरणेन कैशिकयोरवैशसम् । तत्रापि ऋषभधैवतयोर्गान्धारनिषादादिमश्रुत्याक्रमणेन प्रत्येकं चतुःश्रुतित्वं वा शास्त्रविहितम् ॥

—Rāgavivekādhyāya SR.

śruti and that perhaps did service for the tritone, but the madhyama is now openly assuming the role of a sharp fourth as against the śuddha-pañcama. In Naṭṭa, Devakrī, etc., Ri and Dha take two śrutis each from Antara and Kākali and become pañcaśruti Ri and Dha respectively. These again are new intervals. In Śrīrāga Ga and Ni are made triśrutis. He remarks that the Catuśśruti Ri and Dha are sanctioned by text. Putting all this together we find a complete revolution in theory and practice.

This revolution becomes pronounced in the Svara-meḷakalānidhi of Rāmāmātya. Some of the old śrutis had become obsolete in use, and so he says Acyuta Sa, Acyuta Ma, Vikṛta Ri, Vikṛta Dha, and Vikṛta Pa are not distinct from Śuddha Sa, Śuddha Ma, Śuddha Ri, Śuddha Dha and Vikṛta Pa respectively. These are one and the same intervals in practice. His recording of the svara names of his time is important. Cyuta Sa (3rd Śruti) is called by him Cyuta Ṣaḍja Ni; Cyuta madhyama is Cyuta madhyama gāndhāra; Cyuta Pañcama is Cyuta Pañcama madhyama. The Ṛṣabha which is identical with Śuddha Ga is Pañcaśruti Ri; the Ri identical with Sādhāraṇa Ga is Ṣaṭśruti. Similarly Dha is Pañcaśruti and Ṣaṭśruti. The new names of svaras indicate the use to which they are now put. One striking characteristic is that each note is now sought to be sharpened to its utmost possibility. Ṣaṭśruti R and D are significant as paving the way for the prastāra of the future meḷakartās. Cyuta Pañcama Ma had by this time definitely driven the Vikṛta Pañcama off the field. The Madhyama grāma becomes a fossil of the past.

Lakṣmī Nārāyaṇa in his Saṅgīta Sūryodaya simply follows the Saṅgīta Ratnākara. In the Rāgavibodha we find more vikṛtas introduced. Somanātha accepts the 7 vikṛtas of Rāmāmātya, though the Cyuta ṣaḍja Ni, Cyuta madhyama Ga, and Cyuta pañcama Ma, are called

by him Mṛdu ṣaḍja Ni, etc. He mentions 8 more vikṛta svaras, *viz.*, Tīvratama Dha=Kaiśiki Ni, Tīvra R=8th śruti, . Tīvratara Ri=Śuddha Ga, Tīvratama Ri=Sādhāraṇa Ga, Tīvratama G=Acyuta Ma, Tīvratama Ma =15th Śruti, Tīvra Dha=21st Śruti and Tīvratara Dha=Ni.

The most striking feature of the Saṅgīta Pārijāta is the care devoted to the flattening of notes as well as the sharpening of them and the utilisation of every one of the 22 śrutis. Ahobala is unique in this, since no other author before or after him except the authors of the Meḷādhikāralakṣaṇa and the Saṅgīta Śāstra Saṅkṣepa does so. According to him Pūrva Ri=5th Śruti, Komala Ri=6th, Śuddha R=Pūrva Ga, 8th śruti=Komala G=Tīvra R, Śuddha G=Tīvratara R, Tīvra Ga=10th Śruti, Tīvratara G=11th, Tīvratama G=12th, M=Atitīvratama G, Tīvra M=14th, Tīvratara M=15th, Tīvratama M=16th, Pūrva D=18th, Komala D=19th, Śuddha D=Pūrva N, Komala N=21st=Tīvra D, Śuddha N=Tivra D, Tīvra N=1st, Tīvratara N=2nd, and Tīvratama N=3rd. What is most noteworthy are the degrees of flattening and sharpening of the notes used.

The śrutis of the Meḷādhikāralakṣaṇa are thus enumerated by Mr. Abraham Panditar in his Karuṇāmṛta Sāgara—(0) Acyuta Ṣaḍja, (1) Prati Śuddha Ri, (2) Śuddha Ri, (3) Prati Catuśśruti Ri=Prati Śuddha Ga, (4) Catuśśruti Ri=Śuddha Ga, (5) Prati Ṣaṭśruti Ri=Prati Sādhāraṇa Ga, (6) Ṣaṭśruti Ri=Sādhāraṇa Ga, (7) Cyuta Gāndhāra Ri=Prati Antara Ga, (8) Antara Ga, (9) Cyuta Madhyama=Cyuta Madhyama Ga, (10) Śuddha Ma, (11) Aprati Ma, (12) Prati Ma, (13) Cyuta Pañcama Ma, Cyuta Pañcama, (14) Pañcama, (15) Prati Śuddha Dha, (16) Śuddha Dha, (17) Praticatuśśruti Dha=Prati Śuddha Ni, (18) Catuśśruti Dha=Śuddha Ni, (19) Prati Ṣaṭśruti Dha=Prati Kaiśki Ni, (20) Ṣaṭśruti Dha=Kaiśiki Ni, (21) Cyuta Niṣāda Dha=Prati Kākali Ni,

(22) Kākali Ni, (23) Cyuta Ṣaḍja=Cyuta Ṣaḍja Niṣāda, (24) Niyata Ṣaḍja.

The svaras Cyuta madhyama Ga, etc., resemble Rāmāmātya's names for such notes. The intervals called Pratiśuddha Ri, etc., have their parallels in some notes with similar names in Govinda's Saṅgīta Śāstra Saṅkṣepa. The use of Cyuta ṣaḍja, Cyuta pañcama and Cyuta madhyama in this modern work is noteworthy. If they were used as independant notes in scales, several more thousands of meḷas will have to be added to the total of 4624 scales estimated to be possible without them as madhyama, pañcama and ṣaḍja. The use of 7 varieties each of ṛṣabha, gāndhāra, dhaivata and niṣāda, four varieties of madhyama and two of pañcama is remarkable, but the original Ms. stops in the madhya group of meḷas. The constitution of these śruti meḷas seems to have been inspired by the example of Somanātha, and both schemes are equally devoid of practical utility.

In an article on 'Meḷādhikāralakṣaṇa' in the Journal of the Music Academy, Vol. I, No. 1 are given the names of the notes of the Meḷādhikāralakṣaṇa some of which differ from those given by A. Panditar, the most important being cyuta madhyama-pa (also cyuta-pañcama-ma) and cyuta-ṣaḍja ni for cyuta pa and cyuta sa given in the Karuṇāmṛta Sāgara. Discussing the value of the book the author of this article says: 'It can be easily demonstrated that the 24 Śrutis are actually in use, and therefore ought to be scientifically recognised, and the merit of the present work appears to me to lie in having done this'. If it is true that the 24 Śrutis are in use, the system of Veṅkaṭamakhin based on the 22 Śrutis (with reference to which he explains his meḷas) becomes antiquated and is superseded by the system of 24 Śrutis. If the old definition of the Śrutis equally dividing the octave is admitted, the two kinds of

Śrutis will each differ from one another by about 4-5 cents. Moreover this writer's acceptance of the scheme of 24 Śrutis is subject to the same criticism as Mr. Abraham Panditar's advocacy of the 24 Śrutis, since both schemes contain similar errors. Mr. Panditar seems to be on more secure ground, because he admits the insufficiency of the 24 śrutis to express our music by further dividing the octave into 48 and 96 intervals.[1]

Coming to the current system of svaras and śrutis as propounded by Govinda Dīkṣita, Veṅkaṭamakhin and Tulajā Mahārāja, we find the culmination of the process which began after Śārṅgadeva. According to this system, Śuddha Ri=7th śruti=Gauḷa Ri, 9th śruti=Pañcaśruti Ri=Śrīrāga Ri, 10th śruti=Ṣaṭśruti Ri=Nāṭa Ri, 9th śruti=Śuddha Ga=Mukhāri Ga, 10th śruti=Sādhāraṇa Ga=Śrīrāga Ga, 12th śruti=Antara Ga=Gauḷa Ga, 13th śruti=Śuddha Ma, 16th śruti=Prati Ma=Varāḷī Ma, 17th śruti=Pa, 20th=Śuddha Dha=Gauḷa Dha, 22nd=Pañcaśruti Dha=Śrīrāga Dha, 1st śruti=Ṣaṭśruti Dha=Nāṭa Dha, 22nd=Śuddha Ni=Mukhāri Ni, 1st śruti=Kaiśiki Ni=Śrīrāga Ni, and 3rd śruti=Kākali Ni=Gauḷa Ni. The illustration of the srutis in the light of rāgas is important. Veṅkaṭamakhin's system becomes truly epoch-making because he formulated for the first time all the notes current in the practice of his time into a comprehensive scheme of 72 Meḷakartās, which stands to the credit of Karnatic music and has endowed it with a method of classification which is perfectly complete.

As regards the Meḷakartā scheme, in the Conference of the Madras Music Academy (held in 1934), it was

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1. If it is argued that Veṅkaṭamakhin stated that the Śrutis are 24 in the Guṇḍa-Kriyā gīta, it must not be forgotten that he admits only 22 Śrutis in the Caturdaṇḍīprakāśikā, and that in the Meḷaprakaraṇa he defines the Śrutis of every svara occurring in the 19 meḷas of his time and for each scale he gives the total value of the svaras as 22 Śrutis for an octave.

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stated by Nazir Uddin Khan of Indore that the scheme now expounded as Veṅkaṭamakhin's existed 300 years before him. According to Mr. Khan this was proved by the mention of the 72 Meḷakartā names in 4 Dhrupadas composed by Bijou Nāik, stated to have gone to the north from South India during the time of Alāudin Khilji. Similar data is found in the fragmentary manuscript of the work of Somanārya, in which are mentioned the names of the Meḷakartās. As against this should be set the fact that in no important work after Śārṅgadeva till Veṅkaṭamakhin, is the scheme of the Kartās mentioned. The material for the Kartās was available since the time, at least of Rāmāmātya, who uses Śuddha Ri, Pañcaśruti Ri and Ṣaṭśruti Ri and 3 similar varieties of Dha in addition to the sharp fourth. But though Somanātha sets a precedent in the formation of the Meḷakartā scheme, it is not till the time of Veṅkaṭamakhin that the above-said intervals are employed to form the 72 Meḷakartās.

After the 72 Meḷakartās had remained in tact for nearly 300 years, the scheme has been criticised recently as using the same interval for 2 different names of notes and hence it is proposed that all such scales which use the same notes with different names should be reformed and that we should retain scales in such a form as would do away with the necessity of using 2 names for the same note. But this argument ignores several reasons which justify the constitution of the Meḷakartās in their present form. First, these notes have been taken from usage, which, at least, dates from the time of Rāmāmātya. It is evident that the different notes used in Veṅkaṭamakhin's scheme were adopted from the practice of the art and that they were not the fanciful creations of any individual theorist. The second reason to be urged against the above argument is that the flattening or sharpening of the notes concerned is not against their nature as Vikṛtas. The Vikṛta has been defined as the note obtained by the devia-

tion from its Niyata śruti.[1] Hence in the Meḷakartās, the principle that has been adopted in the formation of the Vikṛtasvaras amounts to this, *viz.*, Ma is not flattened below its Śuddha position and is sharpened to any extent below the Pañcama. Ri is sharpened up to the Sādhāraṇa gāndhāra and Dha up to the Kaiśika Niṣāda. Ga is flattened from the Antara position to the region of the śuddha (and in practice even slightly below) and Ni from the Kākali to the śuddha position. The usage of Vikṛta notes sanctions the freedom of these notes to be flattened or sharpened within the said limits. As regards the argument that the same svara is called by two different svara names, it must be noted that such scales have a distinct individuality which cannot be destroyed even though one or more notes occurring in those scales are called by different names in other scales. For instance, the combination Sa, Ri (Śuddha), Ga (Śuddha), Ma (Sharp), Pa, Dha (Śuddha), Ni (Kākali), is well-known as an ancient and very prominent melody-type. Though this śuddha gāndhāra may elsewhere occur as a sharp Ri, the individuality of the scale remains indestructible. The same argument applies to Calanāṭa. These two scales alone are sufficient to afford recognition for the notes in the Meḷakartā scheme, bearing double names. What matters in the use of such notes is the value that they acquire as the flat or sharp of a particular note and not the strict rules of unduplicated nomenclature.

In Govinda's Saṅgīta Śāstra Saṅkṣepa a different account of śrutis is given and it merits our attention because of its intimate bearing on current practice and its difference from the theory of the Caturdaṇḍīprakāśikā. According to the author the open string gives Sa. His names for the śrutis can be tabulated as follows:—

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1. Kāśīnātha in his Saṅgīta Sudhākara gives the following definition:
स्वराः स्वनियतश्रुत्याः प्रच्युता विकृताः स्मृताः ॥

No.	Names of Śrutis.	Names of Svaras.	
1	Tīvrā. (तीव्रा)	Ri (a)	
2	Kumudvatī. (कुमुद्वती)	Ri (b)	
3	Mandā. (मन्दा)	Ri (c)	Ga (a)
4	Chandovatī. (छन्दोवती)	Ri (d)	Ga (b)
5	Dayāvatī. (दयावती)	Ri (e)	Ga (g)
6	Rañjanī. (रञ्जनी)	Ri (f)	Ga (h)
7	Raktikā. (रक्तिका)	Ga (i)	
8	Raudrī. (रौद्री)	Ga (j)	
9	Krodhā. (क्रोधा)	Ma (a)	
10	Vajrikā. (वज्रिका)	Ma (b)	
11	Prasāriṇī. (प्रसारिणी)	Ma (i)	
12	Prīti. (प्रीतिः)	Ma (k)	
13	Mārjanī. (मार्जनी)	Pā	
14	Kṣiti. (क्षितिः)	Dha (a)	
15	Raktā. (रक्ता)	Dha (b)	
16	Saṁdīpinī. (संदीपिनी)	Dha (c)	Ni (a)
17	Ālāpinī. (आलापिनी)	Dha (d)	Ni (b)
18	Madantī. (मदन्ती)	Dha (e)	Ni (l)
19	Rohiṇī. (रोहिणी)	Dha (f)	Ni (m)
20	Ramyā. (रम्या)	Ni (n)	
21	Ugrā. (उग्रा)	Ni (o)	
22	Kṣobhiṇī. (क्षोभिणी)	Sa.	

Prefixes appended to the notes in the above list are the following:—

a. Pratiśuddha.
b. Śuddha.
c. Praticatuśśruti.
d. Catuśśruti.
e. Prati Ṣaṭśruti.
f. Ṣaṭśruti.
g. Pratisādhāraṇa.
h. Sādhāraṇa.
i. Pratyantara.
j. Antara.
k. Prati.
l. Prati Kaiśikī.
m. Kaiśikī.
n. Prati Kākalī.
o. Kākalī.

The above classification differs from all other lists in the assignment of svaras to the śrutis, tīvra. etc.[1] But like Ahobala, the author has included every one of the twenty-two śrutis. This scheme has the unique merit of taking into account all the śrutis, śuddha and vikṛta of every note, *e.g.*, Ṛṣabha is sharpened up to six śrutis and every one of these six śrutis is called Ri.[2]

The vivādi doṣa affecting 40 of the 72 scales has been considered not to be a defect, since the time at least of Tyāgarāja and Govinda, in whose Kṛtis and Gītas the so-called vivādi aspect is entirely ignored. Mr. K. V. Srinivasa Iyengar has argued vigorously against the vivādis in his Gānabhāskara.

Mr. Fox-Strangways points out that the Karnatic system 'merges' and that it recognises not 22 but only 16 nominal and 12 real sub-divisions of the scale. It is surprising that such a keen critic as he should have made these remarks. The 'Merger' of the svaras, I am convinced and have made evident in the 'Analysis of Rāgas', is only partial. The identity sought to be established between Ṣaṭśruti Dhaivata and Kaiśiki Ni and so on does not represent the whole truth. For, taking these 2 notes as musical facts and judging from the manner of their usage, we clearly see that the 2 notes may coincide at a point, but their range, manipulation, and effect are entirely different.

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1. Cf. the following lines of Śārṅgadeva :—

तीव्राकुमुद्वतीमन्दाछन्दोवत्यस्तु षड्जगाः ।
दयावती रञ्जनी च रक्तिका चर्षभे स्थिताः ॥
रौद्री क्रोधा च गान्धारे वज्रिकाथ प्रसारिणी ।
प्रीतिश्च मार्जनीत्येताः श्रुतयो मध्यमाश्रिताः ॥
क्षिती रक्ता च संदीपिन्यालापिन्यपि पञ्चमे ।
मदन्ती रोहिणी रम्येत्येतास्तिस्रस्तु धैवते ॥
उग्रा च क्षोभिणीति द्वे निषादे वसतः श्रुती ॥ —Svarādhyāya.

2. *Vide* Appendix I,

Their values as notes in the scale are distinct in spite of their overlapping one another at some point or other. Hence Western and Indian critics are not justified in saying that the so-called merger is a duplication of the notes included in it. To argue for the deletion of such scales is inadmissible and is based on a misunderstanding of the spirit and essence of Karnatic music. Again it is wrong to say that the Karnatic system does not recognise 22 śrutis. This is to deny the truth. Every Southern writer bases his treatment on the 22 śrutis system. Taking 2 authors alone who are considered to be the most important authorities on the present system, *viz.*, Veṅkaṭamakhin and Govinda, we find them defining even the rāgas in terms of the 22 śrutis. As regards the statement that there are only 12 real sub-divisions of the octave, it has to be said that these alone do not determine the nature of the rāgas. The 16 nominal sub-divisions are more than nominal because they have each a distinct individuality and in usage each of them differs from the other.

The Śuddha scale, Kanakāṅgī, of the Karnatic system is the same as that of the ancients.[1] It is to be said to the credit of this system, that while the Hindustani system adopted Bilāval as the Śuddhameḷa sometime in the modern age, in South India the Śuddha scale of Bharata and his

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1. शुद्धैः सप्तस्वरैर्युक्तो मुखारीमेल उच्यते ।
चतुश्चतुश्चतुश्चैव षड्जमध्यमपञ्चमाः ॥
द्वे द्वे निषादगान्धारौ त्रिस्त्रीरिषभधैवतौ ।
इत्यस्य श्रुतयः पूर्वैर्द्वाविंशतिरुदाहृताः ॥
पूर्वोक्तमेलप्रस्तारे भेदोऽयं प्रथमो मतः ।

—Caturdaṇḍīprakāśikā.

Govinda defining Kanakāmbarī (which according to him is called Kanakāṅgī), the Śuddhameḷa, says in his Saṅgīta Śāstra Saṅkṣepa :—

शुद्धस्वरसप्तवती पूर्णारोहावरोहिका ।
वायुबीजाक्षरा शुद्धमुखारीति वदन्ति ते ॥

successors has remained alive to the present day. The merit of the present system is that it is a happy blending of the śuddha scale of the Sanskrit theorists and the mela structure as designed by the ancient Tamils. This Śuddha scale seems to me to be more ancient than even the age of Bharata, because it is possible to link its notes with those of the Sāman Chant.

It is not possible to agree with Mr. Fox-Strangways when he quotes Day as saying that for South India quarter tones (śrutis) are 'confined to grace'. Basing himself on the popular meaning of śruti as keynote, he goes on to say that in the South there is a transference of meaning from 'a nice distinction of pitch' to 'that which determines pitch'. This statement is opposed to practice according to real artists in the South and also textual authority; by 'śruti' both these clearly mean 'distinction of pitch'.

How far the śrutis are real in the practice of South Indian Music? Do the 22 śrutis represent the substance of Karnatic music faithfully? The answer is that without the śrutis and the distinction made by them between the musical intervals in vogue, Karnatic music will not be what it is. Are these śrutis equal? Mr. Fox-Strangways observes very truly that the śruti enters into music as one of three definite intervals. Just as there are 3 diatonic intervals, so there are 3 enharmonic intervals, *viz.*, 81|80 (22 cents), 25|24 (70 cents), 256|243 (90 cents). He adds that these intervals as such remain theoretical and that they are actually sung only as increments of other larger intervals. He is right when he criticises the view that the 22 śrutis are 22 stopping places as being incorrect, because, as he says, artistically this is wrong since no 2 or 3 of these are ever sung in succession. He rightly defines that the śruti is not the smallest audible sound, but the accurately audible sound—that which is heard in accurate relationship to some other.

Are the śrutis equal divisions of the octave? The above argument denies that it is so. And the numerous attempts that have been made to evaluate the ratios of the intervals represented by the śrutis all go to show that the śrutis are not equal. Rival theories have been advanced, *viz.*, the division of the octave into 24, 48 and 96 equal intervals. The division into 24 śrutis is mentioned in the Lakṣaṇa Gīta in Guṇḍakriyā by Veṅkaṭamakhin, and also in the Saṅgīta Sāra Saṅgraha (in the Tanjore library). In the Meḷādhikāralakṣaṇa, scales are formulated on the basis of 24 śrutis. Mr. Clements in his discussion of Bharata and Śārṅgadeva adds 3 more śrutis to the 22 because according to him these alone will represent truly their music.[1] Mr. C. S. Aiyar in his valuable pamphlet 'A note on Śrutis in Karnatic music' says that 3 more śrutis should be welcome as additions to the 22 śrutis (this resembles the view of Mr. Clements), and that the South Indian ear is even sensitive to as many as 30 śrutis in all. The latter statement is important because it indicates the truth of the practice and also because it questions the validity of the 22 śrutis.

To me it seems that the system of the 22 śrutis is the starting point of the elaboration of melody and that we have progressed far beyond what is represented by that system. It is true that we employ intervals which have been utilised in that system, but it is also true that we have come to make use of intervals within the octave which are more minute than the 22 śrutis. The view that the 22

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1. Mr. Clements writes:—"It will be seen that the ancient system required 25 śrutis, and not 22, three of them being confounded with their neighbours." He explains the three additional śrutis as follows:—

Name of śruti.	Number of śruti.	Value of śruti in cents
Tīvrā	1	22—70
Vajrikā	10	520—568
Sandīpinī	16	836—884

śrutis of the grāma music are no longer current is not acceptable because according to Mr. Bhandarkar the human faculty of appreciating musical intervals must have remained constant always. My view is that according to popular taste emphasis may be shifted from age to age in the use of intervals but that these intervals are fairly the same at all times, so far as regards main intervals like the major tone, minor tone, the fourth, etc. As regards subtle intervals like śrutis, Karnatic music has to employ a vast variety of them. As Mr. Fox-Strangways has pointed out they are not used separately, and three or even two of them are not used in succession. They are used as part of the major intervals which they decrease or increase according to the requirements of song. They feature in gamakas, in which the freedom of the use of these śrutis is completely manifested. I am inclined to think that the flattening or sharpening of each note by śrutis is left to the choice of the singer who is only limited by the farthest boundary line allowed for each svara. Also we find in Karnatic music that each note adopts śrutis in Gamakas in a seemingly wayward fashion, but yet maintains its personality. This phenomenon is really wonderful. Mr. Clements in his 'Rāgas of Tanjore' says truly: 'Modern India has inherited a wonderful system employing a vast number of scales capable of representing all shades of feeling. Equal temperament tends to destroy utterly this elaborate structure. The only means of combating this insidious enemy is to construct and popularise an accurate theory of intonation; I know of no other way to preserve the art of Indian music'. Every one will agree with Mr. Clements in his view, above quoted, that the śrutis current in Karnatic music can be understood only by reference to the intonation that reveals its individuality. In the chapter 'The Analysis of Rāgas' the results of my experiments on the sonometer regarding the intervals occurring in our music are given. All the figures obtained are strictly according to the theory and

practice of intonation as embodied in the compositions in each rāga analysed.

One point remains to be noticed. It is the plurality of śrutis governing the notes in the Rāgas. Hitherto single figures have been given by various writers as the values of the śrutis in each rāga. But it may be clearly seen that in each rāga a note assumes different shapes (within the limits set by its individuality) and I have included the study of these variations in the śrutis affecting the same note in the same rāga. It is more or less a general tendency for the śruti of a particular note to appear sharp when that note is relinquished for a higher note and to appear flat when a descent is made from that note. Also this variation depends upon the need of the singer within the limits mentioned above. And gamakas afford a wide choice of śrutis in the treatment of a note.

Taking the śuddha scale Kanakāṅgī we find that Śuddha Ri takes at least 2 values, *viz*: 10|9 and 256|243 and Śuddha Dha assumes similarly the values, 5|3 and 128|81. In the analysis of rāgas it will be found that, owing to the requirements of melody, more than one interval is employed in each svarasthāna, which would be incorrect if represented by a single śruti-value.

Another very important factor regarding the usage of notes, which has not been taken notice of by theorists, is the illusory effect of śrutis in usage. This is remarkable in view of the acceptance of single values for svaras. On the Vīṇā, which reproduces the human voice, and on all other instruments, in the varek prayogas MPM, NSN, DND, SRS, etc., the second note is never fully produced. It is simply approached approximately, and the hearing of the second note is only illusory. This is clearly demonstrable on the Vīṇā and the sonometer. (The ratios for some of these notes are given in the analysis of rāgas). As regards Sa, Ma and Pa, in these cases these are only approximately produced but the effect is as if those notes

were all produced. In these cases these really may amount to Cyuta Sa, Ma and Pa, respectively. These are not used as independent forms but are used as reduced notes. These may be called illusory notes and properly belong to the subject of gamakas but their importance as regards the problem of the śrutis demand their treatment here. These illusory notes form a familiar and not ignorable feature of our music.

Some intervals occurring within the octave in the light of the intonation of the notes of the various rāgas in practice are given below as they have been obtained by my experiments.

$\frac{25}{24}$ $\frac{256}{243}$ $\frac{16}{15}$ $\frac{27}{25}$ $\frac{2187}{2000}$ $\frac{256}{225}$ $\frac{625}{576}$ $\frac{10}{9}$ $\frac{9}{8}$ $\frac{729}{640}$ $\frac{75}{64}$ $\frac{32}{27}$ $\frac{6}{5}$

$\frac{144}{125}$ $\frac{243}{200}$ $\frac{5}{4}$ $\frac{81}{64}$ $\frac{320}{243}$ $\frac{2187}{1600}$ $\frac{4}{3}$ $\frac{27}{20}$ $\frac{40}{27}$ $\frac{45}{32}$ $\frac{64}{45}$

$\frac{3}{2}$ $\frac{36}{25}$ $\frac{25}{16}$ $\frac{128}{81}$ $\frac{8}{5}$ $\frac{24}{15}$ $\frac{128}{75}$ $\frac{5}{3}$ $\frac{27}{16}$ $\frac{16}{9}$ $\frac{9}{5}$

$\frac{15}{8}$ $\frac{243}{125}$ $\frac{48}{25}$ $\frac{50}{27}$ $\frac{243}{125}$

Among the intervals given above, some occur independently in the rāgas and others either as an augment or decrease of other intervals or in gamakas.

The illusory notes may be illustrated with reference to the diminution of normal intervals for example in the following vareks in Śaṅkarābharaṇa. S=256 vibrations:—

S R S.	R G R.	G M G.	M P M.	P D P.	D N D.	N S N.
279	303	337	379	425	474	505

The middle notes in the above groups do not assume their normal values, but leave the impression of sounding true to their names on the ear.

It may be noted that the identification of Catuśśruti Dha, with Śuddha Ni and of Catuśśruti Ri, with Śuddha Ga, as given in 'The Music of Hindustan' by Mr. Fox-Strangways and by Mr. A. M. Chinnaswamy Mudaliar in his 'Oriental Music', is not correct because Śuddha Ga is produced on the ninth śruti and śuddha Ni on the twenty-second; so they are clearly sharper than the values given by both writers by one śruti. Though the Ṣaṭśruti Ri, is identified with sādhāraṇa Ga, (and not with antara Ga as is done by Mr. Fox-Strangways, *vide* 'The Music of Hindustan', p. 184[1]), and Ṣaṭśruti Dha with Kaiśiki Ni, the two notes function as Ri and Dha sharpened, and this is enough to distinguish them from the categories of Gāndhāra and Niṣāda.

1. The mention of antaragāndhāra is probably due to an error in printing.

CHAPTER III.

The Classification of Rāgas.

With the development of music and the growth of variety in the melodies conceived and adopted in practice, the necessity arose for a system which would bring them together in a well-understood scheme of classification. The principles of such classification have been numerous, *e.g.*, the number of notes or their quality, etc., as is evident from the history of the development of scales. It is extremely interesting to find the Puṣpasūtra classifying Sāmans according to the number of notes used in them. According to it, most of the Sāmans are sung to 5 notes, some to 6 notes, and 2 (called Kauthumas) to 7 notes. This is remarkably like our auḍava, ṣāḍava, and sampūrṇa classification of rāgas. The next broad division of melodies is according to Ṣaḍja and Madhyamagrāmas, which divide the jātis into 2 groups. The Gāndhāra grāma is spoken of as obsolete. The jātis are also divided into 2 groups called śuddha and vikṛta. The former have the note after which they are named for their nyāsa, apanyāsa, aṁśa and graha. Their nyāsa note is never in the tāra. The vikṛtajātis differ from them in these respects. The principle of classifying the species under their appropriate genera emerges when classification begins, and we see this principle working from the earliest stages of the development of the art under different names. This will show the absurdity of the views expressed by some authors that classification according to the 'genus-species' system was adopted sometime during the middle ages.

With Mataṅga classification expands. According to him the grāma is useful for the arrangement or classifi-

cation of svaras, śrutis, mūrchanās, tānas, jātis and rāgas. He says that the Gāndhāragrāma given by Nārada is obsolete. He quotes Bharata and says that 4 jātis employed 7 notes, four jātis 6, and others 5, (and gives their names). He says that the jātis are so-called because the rāgas are born of them. He cites examples of melody-types with four notes. He gives 7 gītis, *viz.*, Śuddha, Bhinna, Gauḍi, Rāgagīti, Sādhāraṇi, Bhāṣā and Vibhāṣā; also Durgaśakti's 5 gītis, Bharata's 4 gītis and Śārdūla's Bhāṣāgīti. Melodies are distinguished according to these. He gives the number of rāgas as 5 under Cokṣās, 5 under Bhinnakas, 3 under Gauḍas, 8 under Rāga, 7 under Sādhāraṇa, 16 Bhāṣās, and 12 Vibhāṣās. Bhāṣās are according to him of 4 kinds, *viz*: Mūla, Saṅkīrṇa, Deśaja and Chāyā Āśraya. These are established in grāma rāgas. Mataṅga says that the Grāmarāgas are derived from the 2 grāmas, and from the Grāmarāgas are derived Bhāṣās. From these Vibhāṣās originate, and from them, Antarabhāṣās. A list of them with their rāga of origin and definitions is given. The definitions of Deśīrāgas are interrupted.

Nānyadeva, who quotes Mataṅga, Kāśyapa, etc., in his Bharata Vārtika, gives important information regarding classification. He deals with Jātis elaborately in accordance with the standard definitions. What makes his contribution important is that he states in an introductory śloka that he will give the rāgas originating in all the 3 grāmas. Under the Gāndhāragrāma he describes a fairly big number of rāgas. He gives the equivalent rāgas of Kāpālapadas and Kambaḷas.

Nārada in his Saṅgīta Makaranda describes the Gāndhāragrāma in addition to the 2 other grāmas. He describes the different deities of the grāmas. The names of jātis are given. He enumerates the names of Rāgas, like Devagāndhārī, Dhanyāsi, Gurjari, Bhūpāla, etc. He divides rāgas into Sampūrṇa, Ṣāḍava and Auḍava; and

also into masculine, feminine, and neuter groups. Nārada mentions another division of rāgas into 6 male rāgas and their wives.

The author of the Aumāpatam gives grāmas as 18 describing them as the janaka of jātis. His whole system is very peculiar and elaborately worked out. His theories stand out individually, and most of them do not seem to be taken notice of by later authors. He mentions jātis with curious names, *viz.*, mārjāra, vānara, etc. He gives 36 Śudda rāgas; among them are mentioned Nāgadhvani, Taraṅgiṇī, Ābhīri, etc. The whole book is in the form of a discourse by Śiva. Twenty-one rāgas are given as propounded by Ṛṣis. Then 5 rāgas are given as emanating from Śiva's 5 months. Some Sālaga rāgas are given. Janyas are given as emanating from this or that rāga. Those that partake the Chāyā of Śuddha rāgas are chāyālaga rāgas. Rāgāṅgas are so called because they assume the colour of rāgas. "The Bhāṣāṅga rāgas slowly emerge when the rāga is thought of." When the rāga emerges as the rāga goes and returns it is a kriyāṅga. When a rāga dwells near another, it is upāṅga.[1] Examples of each class are given. Śuddha rāgas are of the form of Śiva, Sālagas of the form of Śakti; when they merge together it is Saṅkīrṇa.

The system of the Ratnākara is the subject of elaborate classification. Here only the principles of the division are noticed. The main division is that into Mārga and Deśī, the former distinguished from the latter by the inexorable nature of the rules that bind them. Kallinātha

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1. रागच्छायानुकारित्वाद्रागाङ्गानि विदुर्बुधाः ।
रागे मनोगते चापि शनैर्य उपलभ्यते ॥
स तु भाषाङ्ग इत्युक्तः क्रियाङ्गस्त्वथ कथ्यते ।
रागे जातेऽपि शनकैर्गतागतिविधानतः ॥
क्रियाङ्गस्योपलब्धिः स्यादुपाङ्गस्त्वथ वक्ष्यते ।
उपसार्यमाप्यतो वृत्ते रागानामप्युपाङ्गता ॥ —औमापतम् ॥

points out that the Rāgas are divided into 10 kinds.[1] The grāma rāgas are divided into 5 groups according to the 5 Gītis, Śuddha, Bhinna, Gauḍa, Vesara and Sadhāraṇi. The total number of Grāma rāgas is given as 30. Śārṅgadeva deals with the grāma rāgas which yield Deśī rāgas, etc. Bhāṣas, Vibhāṣās, and Antarabhāṣas, are derived from the grāma rāgas. Upāṅgas are given and defined as the resemblance to some extent between 2 rāgas. Kriyāṅgas are mentioned. The Janyajanaka principle is clearly established. Kallināṭha in commenting on the rāgas of his time remarks about the difference between the 'Meḷana' of the Janya and Janaka rāgas that had taken place. Ṣāḍava and Auḍava rāgas are mentioned by him. Bhāṣāṅgas, Rāgāṅgas and Upāṅgas are explained, and this group, according to Śārṅgadeva, comes under Deśī rāgas.[2]

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1. The 10 groups include respectively Grāmarāgas, Uparāgas, Rāgas Bhāṣās, Vibhāṣās, Antarabhāṣās, Rāgāṅgas, Bhāṣāṅgas, Kriyāṅgas and Upāṅgas. *Vide* Saṅgīta Ratnākara for their detailed treatment.

Kallināṭha explaining Umāpati's threefold division of rāgas states that śuddha rāgas are charming without transgressing the rules laid down in the śāstra, that chāyālaga rāgas are sweet because they assume the chāyā (likeness or colour) of *other* rāgas, and that Saṅkīrṇa rāgas are pleasing because they are the result of the mixture of śuddha and chāyālaga rāgas. In this connection he quotes Umāpati :—

मयैव पञ्चभिर्वक्त्रैः सृष्टाः पूर्वं कुतूहलात् ।
अतः संभूय शुद्धास्ते षट्त्रिंशत्संख्ययोदिताः ॥
एतेषां छायया जाताश्छायालगसमाह्वयाः ।
असंख्याकास्तु ते तेषु शतमेकोत्तरं क्रमात् ॥
शुद्धं तु शिवरूपेण शक्तिरूपेण सालगम् ।
द्वयोर्मिश्रं तु संकीर्णमतस्ते त्रिविधा मताः ॥

2. Kallināṭha quotes Mataṅga's definition of Rāgāṅgas etc. thus :—
रागाङ्गादिशब्दानां निरुक्तिर्मतङ्गोक्ता द्रष्टव्या । यथा—

"ग्रामोक्तानां तु रागाणां छायामात्रं भवेदिति ।
गीतज्ञैः कथिताः सर्वे रागाङ्गास्तेन हेतुना ॥
भाषाश्छायाश्रिता येन जायन्ते सदृशाः किल ।
भाषाङ्गास्तेन कथ्यन्ते गायकैस्तैतिकादिभिः ॥
शोकोत्साहकरुणादिप्रबला या क्रिया ततः ।
जायन्ते च ततो नाम क्रियाङ्गास्तेन कारणात् ॥" इति ॥

With this is to be compared the definition of Umāpati.

The ancient Tamil system of classification was also very elaborate and scientific. In the Āyappālai 4 kinds of Yāḷs with 4 jātis for each, *viz.*, Ahanilai, Puranilai, Aruhiyal and Peruhiyal, are given. These give 16 jātis on the whole. In the Āyappālai 7 main scales were obtained by forming a scale on each of the several notes of the Śuddha scale. The Tamil works mention 12,000 rāgas. According to the Tamils the Paṇ was a scale of 7 notes, the Paṇṇiyam one of 6 notes, the Tiram of 5 notes, and the Tiraṭṭiram of 4 notes.

Śārṅgadhara in his Paddhati mentions that Bhāṣās are derived from grāmarāgas, Vibhāṣas from Bhāṣās, and Antarabhāṣās from Vibhāṣās. He says that the origin of the rāga is from the 22 Śrutis. In another connection he says that śrutis are only 14. He gives Bhairava, Pañcama, Nāṭa, Mallāra, Gauḍa, and Māḷava as the six well-known rāgas. Then he gives a list of Āśrita or dependent rāgas, *e.g.*, the dependents of Bhairavi are Vaṅgapāla, Guṇakari, etc., numbering 5. Haripāla in his Saṅgīta Sudhākara mentions the 18 jātis and gives 36 Śuddha rāgas as derived from the jātis. He gives six Uparāgas and 20 rāgas derived from the Magrāma. He also gives a list of Upāṅga, Kriyāṅga and Rāgāṅga Rāgas.

Lakṣmī Nārāyaṇa in his Saṅgīta Sūryodaya treats exhaustively about the jātis but his omission of the Deśī Rāgas current in his time is disappointing. This omission may be due to a gap in the current recension of his work.

Rāmāmātya introduces the term 'Meḷa' but Kallinātha has already used the name Meḷana in the sense in which it has been used in musical parlance. Govinda Dīkṣita makes a very important reference in this connection. He says that the meḷas in his work are defined in accordance with the 15 'Meḷas' given in the Saṅgītasāra of Śrī Vidyāraṇya.[1] Hence there is reason to believe that the meḷas are as old

1. Vide my article on 'The contribution of Vijayanagar to Karnātic music' in the Dr. S. Krishnaswami Aiyangar Commemoration Volume.

as the era of Vidyāraṇya, (the first half of the 14th century). So Rāmāmātya's name 'Meḷa' is not quite new. He gives 20 janaka meḷas which practically amount to 15, because of the identical nature of some of the notes occurring in the meḷas. The meḷa system of classification embodies the janya-janaka principle which as we saw was used from very ancient times. The principle remained to be applied in all its completeness by Veṅkaṭamakhin. The extent of the application depended upon the number and nature of the notes accepted by each theorist. Barring Veṅkaṭamakhin, each writer chose to mention only the scales obtaining in the period in which he lived. In fact before Veṅkaṭamakhin, excepting Somanātha, few writers attempted to create new Janaka scales which would complete the permutation of all the notes which were defined as belonging to the gamut. The predecessors of Veṅkaṭamakhin were chiefly concerned with the interpretation and explanation of contemporary theory and practice of music. As regards the rāgas derived from the Meḷas, their classification under Bhāṣā, Vibhāṣā, etc., and Rāgāṅga etc. (so elaborately used and illustrated in the Ratnākara) is not to be found in the Svaramelakalānidhi. Rāmāmātya introduces a novel and rather indefinite mode of classification into the superior, the middling, and the inferior classes. The first is said by him to be free from admixture, and suitable for singing and composing ṭhāyas. The second class was used in the singing of fragmentary portions of songs. The third consisted of light and popular airs.

Puṇḍarīka Viṭṭhala, like Rāmāmātya, says that all the rāgas are derived from the Ṣaḍjagrāma. He gives in his Sadrāga Candrodaya, a list of sixteen janaka meḷās and their janya rāgas. In the same work he expresses the view that Śiva divided the rāgas into three groups, *viz*:—

(1) Śuddha which are independent rāgas.

(2) Sālaṅga in which the colour of another rāga is found.

(3) Saṅkīrṇa which partakes the nature of the above two classes. He says that the Deśī rāgas have been conceived by Hanumān as not bound by rigid rules.[1]

In his Rāgameḷa, he deals with the classification of Hindustani rāgas. He mentions six principal rāgas and assigns five Rāgiṇīs as wives and five putras for each of the six rāgas. In his Rāgamañjarī he includes the definition of 25 Persian airs.

Somanātha's work is unique for the system of meḷakartās, which anticipated Veṅkaṭamakhin's system. The utility of Somanātha's scheme might have been very little since scales built upon microtones are practically useless. But it did pave the way for the present Meḷakartā scheme. Somanātha enumerates only 23 meḷas as being well-known in his time.

Govinda Dīkṣita deals exhaustively with the system of Śārṅgadeva. He gives only 15 scales as meḷas. It was left for his son Veṅkaṭamakhin to construct the scheme of the 72 meḷakartās with which begins the modern epoch of Karnātic music. It is needless to say that this system affords the most perfect method of classifying janya and janaka rāgas. Tuḷaja and Govinda adopt the same scheme. Recently proposals have been made to add to the list of Meḷakartās by the inclusion of the Vikṛta pañcama but this is not tenable since the Vikṛta pañcama has long since become obsolete and also because it would impair the consonance of the keynote and its fifth which is a vital factor in the present system of Indian music.

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1. सर्वत्र देशीगतरागवृन्दे श्रीमद्धनूमान्नियमं न वव्रे ।
रागाः शिवेन त्रिविधाः प्रयुक्ताः शुद्धाः सालङ्गगतास्तथैव ॥
संकीर्णकाश्चेति तदैव शुद्धो योऽनन्ययुक्तोऽप्यतिरञ्जकः स्यात् ।
सालायकश्चान्यवरक्तियुक्तः संकीर्णकस्तूभयरक्तिहेतुः ॥ —सद्रागचन्द्रोदय

Since Veṅkaṭamakhin's time, other systems of classification have also been formulated. Ahobala uses the term Meḷa simply to mean a rāga. He says that Meḷas are made of Śuddha and Vikṛta Svaras and groups them into pūrṇa, ṣāḍava and auḍava varieties. He arrives at a total of 11,340 meḷas which, he says, were discovered by him. However, he chooses to define only the well-known rāgas amongst them. In the definition of the rāgas he describes the value of the svaras. He derives some rāgas from parental scales.

Among northern authors, Locana mentions 12 Rāga Saṁsthitis (another name for Janaka Meḷas). He also speaks of Rāgiṇīs. According to Śrīnivāsa, a meḷa is a group of notes revealing the rāga. The meḷa is of three kinds, *viz.*, Sampūrṇa, Ṣāḍava, and Auḍava.

Hṛdaya Nārāyaṇa classifies scales in the same manner as Locana. In the Rāganirūpaṇa attributed to Nārada, ten Puruṣarāgas with five rāgiṇīs for their wives, and with four rāgas for their sons each of whom has four wives are described.

In the Saṅgīta Nārāyaṇa it is said that 16 thousand rāgas were sung by the Gopīs in the presence of Lord Kṛṣṇa and of them 180 are popular in the world. The author notes the division of rāgas into groups of males and females. He also divides them into Sampūrṇa, Ṣāḍava, and Auḍava. He does not mention the Meḷakartā scheme. The author of the Saṅgīta Saraṇi notices male and female rāgas. In the Saṅgīta Kaumudī the same classification is found, and also the classification into Ṣāḍava, etc.

In the Gītaprakāśa (Oriya manuscript) the jātis as well as Auḍava, Ṣāḍava and Sampūrṇa rāgas are given.[1]

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1. संपूर्णरागाः स्वरसप्तकैः स्युः षड्भिः स्वरैरौडवाख्याः (?) ।
तथौडवः पञ्चभिरुचितो(?)यो त्रिधाश्च रागास्तदेषाम लक्ष्मा(?) ॥
—गीतप्रकाशः

In the Saṅgīta Kāmada the forms of various rāgas are described and eight puruṣarāgas, their strī (female) rāgas and 6 napuṁsakarāgas, and rāgas falling into the three groups Ṣāḍava, Auḍava and Sampūrṇa are given.

In the Saṅgīta Kāmada is given a very peculiar classification of rāgas. It is said that according to Nārada, Kaṇṭhagāna originates in the throat, Tālugāna in the palate and Oṣṭhagana in the lips. Śrīrāga is called Kaṇṭhauṣṭa and Madhyamādi is Kaṇṭhatālu. Dantyagāna also is mentioned.[1]

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1. In the Saṅgīta Kāmada the section called Rāga Sūtra begins with the verse

'नत्वा तु शङ्कराचार्यं सर्वलोकगुरोर्गुरुम् ।
रागमालाभिधं सूत्रं तन्यते शां (? शं) करात्मना ॥'.

After 'इति संगीतकामदे गानलक्षणम्' we find the expression. 'एवं वदति शांकरः ।' Hence the author's name can be taken to be शां(?शं)करः. Reference is made to संगीतदामोदर and कलाङ्कुर

About the gender of rāgas the following observations are made:—

अथ रागलिङ्गभेदः ।

भैरवो भूपतिश्चैव श्रीरागः पटमञ्जरः ।
वासन्तिकश्च भूपालः सारङ्गो मालवस्तथा ॥
एते संगीतशास्त्रज्ञैः पुरुषाष्टौ प्रकीर्तिताः ।
श्रीरागो देवगान्धारी भैरवी गुर्जरी तथा
....
एता रागा स्त्रियः प्रोक्ता गानशास्त्रविशारदैः ।
....
रागास्त्वष्टौ नपुंसकम् ।

According to the number of Svaras, rāgas are divided into the 3 groups, sampūrṇa etc.:—

षाडवौडवसंपूर्णा रागाः स्युस्त्रिविधा मताः ।
षड्भिः स्वरैः समुत्पन्ना षाडवः परिकीर्तितः ॥
पञ्चभिः स्युरौडवः सप्तभिः स्वरैः संपूर्णा भवन्ति ।

The following classification is noteworthy:—

कण्ठाख्यं कण्ठगानं तु नाटस्य नारदोदितम् ।
तालव्यादि तालुगानं भूपते रिपभा (?भा) श्रमा ॥
ओष्ठ्यादेर्मालवादेश्च दोष्ठ्य(?) गानं प्रकीर्तितम् ।
श्रीरागस्य कण्ठौष्ठं स्यात् कण्ठोष्ठात(?) तथैव च ॥

It is surprising that the writers of Orissa do not reveal any trace of the influence of Veṅkaṭamakhin's meḷakartā system in their method of classification.

In a work called Rāgalakṣaṇa which is in the form of a dialogue between Mataṅga and Kohala (but which seems to be of recent authorship) Ṣāḍava, Auḍava, Sampūrṇa rāgas are given, as also their division into Rāgāṅga, Bhāṣāṅga, and Kriyāṅga and Śuddha, Sālaga and Saṅkīrṇa.

In the Śivatattva Ratnākara by King Basava eight puruṣa rāgas, and their 24 wives are given and Mataṅga is cited as having enumerated them. A different list of 6 male rāgas, each having 5 rāgiṇīs for wives are given and defined. In their definition the term rāgāṅga, etc., is used and the mūrchanās of the grāma system which occur in them are mentioned by name. It is strange that this writer also is ignorant of Veṅkaṭamakhin's system.

Coming to the period after Veṅkaṭamakhin, we find that his Kartā scheme is made the starting point of fresh methods of classification. These have been constructively used to derive innumerable scales. Attention has been diverted from trying to fit well-known rāgas into the scheme to the derivation of fresh rāgas according to the following principles of combination. The Ṣāḍava, Auḍava and Sampūrṇa are intermixed in pairs in as many forms as possible (*i.e.*, eight), which gives 483 varieties for every meḷakartā, making up a total of 34,776 janya rāgas. Of course, from these rāgas those which overlap themselves have to be deducted. Again Vakrarāgas can

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तद(?)मध्यमादिरां (?) कण्ठतालुप्रभेदतः ।
कण्ठताल्वादिभेदस्य देशस्य मूर्ध्निस्तथा (?) ॥
दन्त्यादेर्गानं दन्त्ये स्यात् शागादेः (?) प्रभाषितम् ।
निषादेर(?) तथा गानं कण्ठ्योष्ठतामुदितः (?) ॥ —संगीतकामदः।

(After a description of rāgiṇīs, the following colophon is found :—
इति सङ्गीतदामोदरे दामोदराचार्यः । समाप्तोऽयं ग्रन्थः ।)

be combined in innumerable forms. This is practically a limitless source of deriving fresh scales. Another variety is the construction of rāgas which are confined to the Madhyasthāyi up to the Niṣāda and extend into the mandra octave. Rāgas with four notes in either ascent or descent have also been used. In the conference of the Music Academy held in 1934, a rāga consisting of only three notes within the octave, *viz.*, Sa, Antara Ga and Pa was demonstrated.[1] This sort of combination opens further possibilities in the creation of fresh rāgas of this type; but it remains to be seen whether these can rank as rāgas. The introduction of accidentals in rāgas and the importation of foreign melodies can also contribute to the number of extant scales.

1. Vide Appendix III.

CHAPTER IV.

The Structure and the Ālāpa of Rāgas.

The music of India owes its individuality and character to the mode of singing called Ālāpa. By ālāpa our music has grown, developed and reached its present form. The ālāpa is a very ancient form of rendering music and for a proper understanding of the idea it is necessary to discuss the various lakṣaṇas of the rāga which form its important features and which define its personality. The lakṣaṇas of the rāga and the rules of ālāpa have been variously defined and they have all grown with the art and have been modified in several ways in the process of development. And without taking into account these factors the concept of the rāga cannot be comprehended. The Rāga is the bedrock of Indian music since every branch of music, gīta, vādya and nṛtya, depends on it. In the course of this chapter the lakṣaṇa as given by every important author as well as the rules and characteristics given by him of ālāpa will be noticed.

Bharata gives ten lakṣaṇas for jātis[1] (and these are to be taken as applicable to the ālāpa of rāgas which have directly sprung from jātis). According to him grahas have the same importance for jātis as aṁśas. Graha is the note with which the jāti commences. Aṁśa is given great prominence by him since the rāga dwells in it. From it the movement of notes in the mandra and tāra registers proceeds. It determines the anuvādi and saṁvādi, and dwells in the apanyāsa, vinyāsa, nyāsa and sanyāsa.

1. दशविधजातिलक्षणम्—

ग्रहांशौ तारमन्द्रौ च न्यासापन्यास एव च ।
अल्पत्वं च बहुत्वं च षाडवौडविते तथा ॥ —नाट्यशास्त्रम् ।

Nyāsa is used in the closing of the aṅga (musical piece) and apanyāsa is the close in the middle of the aṅga. Bharata gives the number of these notes used in the jātis. Tāragati or movement in the tāra proceeds from the aṁśa, and there are 3 kinds of mandragati with reference to aṁśa, and nyāsa and apanyāsa. There are two kinds of alpatva (or paucity of certain notes) according to laṅghana or leap and anabhyāsa or non-repetition. By these methods ṣāḍava and auḍava are achieved; and by leaping over aṁśa notes when they are sung in antara-mārga and by pronouncing a note only once alpatva is achieved. Bahutva indicates the opposite of alpatva and is of 2 kinds, and includes in sañcāra other balin (strong) notes. Antaramārga establishes the individuality of jātis and is of 2 kinds, *viz.*, by sañcāra (or elaboration) with notes which are strong on account of the aṁśa and by the alpatva (or minimum use) of weak notes. Ṣāḍavita is the use of 6 notes and auḍavita of 5 notes.

The technique of singing the rāgas as embodied in jātis is very advanced. The jātis are to be sung according to the citra, vārtika and dakṣiṇa mārgas, employing the four gītis like Māgadhī, etc. The three octaves are employed; the four varṇas and an elaborate system of alaṅkāras and gītis add to the variety. Instrumental music is also highly advanced. Gāndharva according to Bharata is the music of various instruments, produced on wires, and comprises svara, words and tāla. This is dear to the Gods and to Gandharvas. Its source is the human body, the Vīṇā and the flute. It is of 3 kinds according to svara, pada and tāla. Bharata calculates the number of tānas (which at his time are understood as names for grouping of svaras by permutation) which are derived from mūrchanās. It is interesting to note that the tānakriyā or the production of the tāna on the string is of two kinds, *viz.*, (1) by the pulling of the lower note and the smoothening of the higher note. This is called

praveśa, (2) 'by not touching'. This is called nigraha.[1] It is important to note that 'tāna' as applied to this kriyā shifts the reference from the grouping of the notes in prastāra to the quality and peculiarity of the tone produced.

Matańga is one of the most intelligent and lucid writers after Bharata, and he discusses the problem of rāgalakṣaṇa and ālāpa brilliantly. He quotes Bharata's definition of graha. He makes clear Bharata's definition of aṁśa which, he says, brings out the individuality of the rāga; from it the music starts; it determines tāra and mandra. It is profusely used; it is the object aimed at in the rāga.[2] The apanyāsa is the medial pause and occurs in the middle of the vidārī. The vidārī is of two kinds, gīta-vidāri and padavidārī. By vidārī is meant the division of a pada; it is a division of a musical piece. In the middle of the first vidārī the nyāsa or final is applied and called sanyāsa. This sanyāsa is not a vivādi of the aṁśa. Vinyāsa is the same as sanyāsa, but is applied at the end of the pada. By these definitions he proves the truth of Bharata's allocation of ten lakṣaṇas for the aṁśa. After defining ṣāḍava and auḍava he observes that it is not 'mārga' beyond four notes. He says that this kind of grouping is used among Śabaras, Puliṇdas, Kāmbhojas, Vaṅgas, Kirātas, Bāhlīkas, Āndhras, Draviḍas, and among dwellers of forests. Four notes also occur in Avakṛṣṭa Dhruvas.[3] He mentions

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1. द्विधा तानक्रिया तन्त्र्यां प्रवेशान्निग्रहात्तथा ।
तत्र प्रवेशो नामाधरस्वरविप्रकर्षादुत्तरमार्दवाद्वा । निग्रहश्चासंस्पर्शः ।
—Nāṭya Śāstra.

2. यस्मिन्नंशे क्रियमाणे रागाभिव्यक्तिर्भवति सोंऽशः । ....यश्च बहुप्रयोगतरः सोऽप्यंशः । यो रागस्य विषयत्वेनावस्थितः स्वरः सोऽप्यंशः । —Bṛhaddeśī.

Matańga also says that the aṁśa is dominant because it generates and pervades the rāga. (रागजनकत्वात् व्यापकत्वाच्चांशस्यैव प्राधान्यम् ।)

3. चतुःस्वरात् प्रभृति न मार्गः शबरपुलिन्दकाम्भोजबङ्गकिरातबाह्लीकान्ध्र-द्रविडवनादिषु प्रयुज्यते । ....चतुःस्वरप्रयोगोऽपि....अवकृष्टध्रुवास्वेव वेदितव्यम्.. ।
—बृहद्देशी ।

alpatva and bahutva and antaramārga (which according to him is of two kinds).

Matańga says that the method of rāga, ālāpa, etc., had not been defined by Bharata and others and that he would define them according to theory and practice. This statement is noteworthy. The rāgā delights the mind of the hearers by means of the excellence of svaras and varṇas and the different qualities of tone. The rāga is adorned by varṇas and svaras. The word rāga is derived from the root indicating the act of pleasing. Matańga adds that the word rāga has an etymological as well as a special or conventional meaning like the word paṅkaja.[1] He mentions seven gītis which are modes or styles of song, *viz.*, Śuddha, Bhinna, Gauḍi, Rāgagīti, Sādhāraṇī, Bhāṣāgīti and Vibhāṣā. He quotes Durgaśakti's gītis as Śuddha, Bhinna, Vesara, Gauḍa and Sādhārita. According to the school of Bharata the gītis are Māgadhī, Ardhamāgadha, Sambhāvita, and Pṛthula. The 'great soul', Yāṣṭika is quoted as mentioning three gītis, Bhāṣā, Vibhāṣā and Antarabhāṣā; Matańga is said to propound Bhāṣagīti and Vibhāṣā. The Śārdūla school is said to approve of one gīti only, *viz.*, Bhāṣā.

Matańga then proceeds to give Rāgalakṣaṇas. According to him Cokṣāgīti has sañcāra in mandra and tāra octaves and consists of straight, sporting and even svaras and śrutis. In the Rāgagīti sportive and

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1. रागमार्गस्य यद्रूपं यन्नोक्तं भरतादिभिः ।
निरूप्यते तदस्माभिर्लक्ष्यलक्षणसंयुतम् ॥
तत्रादौ— स्वरवर्णविशेषेण ध्वनिभेदेन वा पुनः ।
रज्यते येन यः कश्चित् स रागः सम्मतः सताम् ॥
अथवा— योऽसौ ध्वनिविशेषस्तु स्वरवर्णविभूषितः ।
रञ्जको जनचित्तानां स च राग उदीरितः ॥
रञ्जनाज्जायते रागो व्युत्पत्तिः समुदाहृता ।
अश्वकर्णादिवत् रूढो यौगिको वाचि वाचकः ॥
योगरूढोऽथ वा रागः ज्ञेयः पङ्कजशब्दवत् ।" —बृहद्देशी

variegated gamakas which are also pleasing, even and issuing from the chest, and pleasing combinations of svaras are used. In the Rāga (gīti) the rāga is made bright by the use of four varṇas. In the Sādhāraṇagīti prayogas which are subtle and soft, and svaras well mixed with kākus are used. The Bhāṣāgīti is made of prayogas issuing from the body, smooth and beautiful, coloured by kākus, and kampitas which are delicate, illumined with māḷavīkākus, sportive and beautiful and consisting of well-controlled phrases. Vibhāṣāgīti should be sung in such a way as to charm the listeners; in it should be used gamakas which are sportive, manifold, as well as lustrous, and kampitas, issuing from the chest, even, belonging to tāra and atitāra, soft, lighted with the madhyama in the mādhya octave, pleasing to the ear, sportive and according to the fancy of the singer.

After the above definition of gītis he proceeds to enumerate the number of rāgas as follows:—5 Cokṣās, 5 Binnakas, 3 Gauḍas, 8 Rāgas, 7 Sādhāraṇas, 16 Bhāṣās, and 12 Vibhāṣās. Under each class he mentions rāgas with their names. In the light of existing literature he is the first author after Bharata to mention rāgas, and discuss their lakṣaṇas. We come across names which are current in present day music like gamakas and rāgas for the first time in Bṛhaddeśī. He then defines the lakṣaṇa of Śuddha, Bhinna, etc., which are categories and are equal to the janaka groups of later times. According to him in the Śuddha group the melodies are independent of foreign jātis and remain in their own jātis. The Śuddhas seem to be the same as the Cokṣās. The Bhinnas are differentiated in four ways, *viz.*, by śrutis, jātis, śuddhabhinna and svaras. The Gauḍas are distinguished by ohāḍī and quick kampitas without resting in the 3 sthāyīs. Then Mataṅga raises the question how the Vesaras can be called rāgas and justifies their appellation by quoting Kāśyapa according to whom the application of the 4 varṇas makes a rāga. And Durgaśakti is quoted as stating that Vesaras

are rāgas because in them the notes move quickly. The Sādhāraṇas partake the nature of the gītis of the foregoing rāgas and Kāśyapa is quoted in support.

Mataṅga asks what the difference is between gīta and rāga and answers by saying that the music characterised by the 10 lakṣaṇas is to be called rāga.[1] (Here we find the 10 lakṣaṇas being attributed to the rāga in unmistakable terms for the first time). Gīta has 4 aṅgas or 5 aṅgas, including Dhruva. This is known through received text or authority. He quotes Kāśyapa as stating that Grāmarāgas are to be used on the stage with aṁśa, nyāsa, ṣāḍava, auḍava, alpatva, bahutva, graha, apanyāsa, mandra and tāra appropriately. Here we have a remarkable formulation of the factors which go to make up rāga ālāpa which prevails up to the present day. The rāgas given by Mataṅga are all illustrated with sañcāris. The book Bṛhaddeśī, obviously incomplete, professedly deals with Deśi music, and is the most important treatise after the Nāṭyaśāstra. In what respects it advances farther than the latter work has been shown above.

Mataṅga gives a descriptive list of alaṅkāras which adorn songs like gamakas. Mūrchanā etymologically indicates, he points out, swooning and increasing or elevating. Mūrchanā is that by which the rāga is made to emerge prominently or conspicuously. It indicates the ascent and descent of 7 notes.[2] It is of two kinds, *viz.*, of

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1. ननु गीतरागयोः को भेदः ? उच्यते । दशलक्षणलक्षितं गीतं रागशब्दाभिधेयम् । गीतं चतुरङ्गोपेतम् । ध्रुवायोगात् पञ्चविधम् । कुत एवं विज्ञायते । आप्तवचनात् । —बृहद्देशी ।

2. ननु मूर्छनाशब्दस्य व्युत्पत्तिः कीदृशी ?
.....व्युत्पत्तिः—
"मूर्छा मोहसमुच्छ्रायोः ।"
मूर्च्छ्यते रागो हि मूर्छनेत्यभिसंहिता ॥
आरोहणावरोहणक्रमेण स्वरसप्तकम् ॥
मूर्छनाशब्दवाच्यं हि विज्ञेयं तद्विचक्षणैः ॥—बृहद्देशी ।

7 notes and 12 notes. The mūrchanā of 7 svaras is of four kinds, *viz.*, Pūrṇa, Ṣāḍava, Auḍavita and Sādhāraṇa. Pūrṇa indicates 7 notes, and Sādhāraṇa shows the inclusion of kākalī and antara. Mataṅga points out that the mūrchanā differs from the tāna in moving in ascending order whereas the latter is in descending order. He gives the different tānas of the Ṣaḍja and Madhyama grāmas. Sādhāraṇa tānas are given. He makes clear the two kinds of tānakriyā mentioned by Bharata in the following manner:—Praveśa produces Ri by pulling away at a note which is to be omitted and which is below Sa. The second variety of praveśa is by the smoothening of an upper note, *e.g.*, to get Ni by the loosening of Sa. Nigraha reveals another by suppressing itself (the text here is not clear). Considering the octaves used for the prayoga of notes, he says that mūrchanās are applied to the middle octave, with the aim of realising 'mandra' and 'tāra'. The distinction between mūrchanās and tānas is made for the pleasure of the singer and the hearer. Mūrchanās are used in the jātirāgas and tānas are used to distinguish the jātis and rāgas of the 2 grāmas. The mūrchanās of 12 svaras are used to realise mandra and tāra octaves. Nandikeśvara is quoted as stating that the 12-svara mūrchanās are used to get jāti, bhāṣās, tāra and mandra. Mataṅga says that though the mūrchanās of seven notes have been propounded by the Ācāryas, the mūrchanās of 12 svaras only are used to get the three sthānas.

By Varṇa is meant singing.[1] It indicates the movement of singing, as is plain by the definitions. In the sthāyivarṇa, the notes are even and without being impaired or struck. In the Sañcāri the movement of the notes is the main characteristic. Ārohi and Avarohivarṇas are literally understood. The alaṅkāras go together with varṇas. Alaṅkāras mean according to Mataṅga adorn-

1. वर्णशब्देन गानमभिधीयते । —बृहद्देशी

ment. They serve the same purpose in song as jewels in adornment. They are 33 in number.[1] All these go to show the high development of rāga-singing at the time in which Mataṅga lived.

Nānyadeva in his Bharatavārtika quotes Mataṅga and Kāśyapa in giving the lakṣaṇas for rāgas. He describes the ālāpaka and rūpaka when he deals with the sañcāri of every rāga. In the sañcāris he gives the aṁśa, graha, nyāsa, gamakas, the rasas and other important details of the rāgas. He mentions 7 gītis and discusses them in a very detailed manner. He notices kākus and varṇas in the manner of Bharata. He gives a full account of the tānas. He accepts 10 lakṣaṇas for jātis which agree with those handed down on the authority of Bharata and others. In giving their lakṣaṇa he quotes Devarāja, Dattila and Bharata. He also gives a well-developed technique of playing on the Vīṇā. He describes the Kāpālikas and Kambalas and their equivalent rāgas, and the vocalising syllables used in them will be noticed later in the discussion of the Saṁgīta Ratnākara in which they are narrated. In the Dattila is given an account of mūrchanās, tānas, and the 10 lakṣaṇas of jātis, varṇas and alaṁkāras.

Nārada in his Saṅgīta Makaranda describes the 4 varṇas and the alaṁkāras pertaining to them. He also mentions gamakas as consisting of 19 kinds. He says there are two kinds of ālāpas, *viz.*, rāga ālaptī and rūpa ālaptī. Rāga ālapti consists of tannana, etc., while rūpaka is called gīta. (Evidently he meant it to be a prabandha). This division becomes the subject of elaborate classification by Śārṅgadeva.

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1. सुप्रसिद्धालयोदशालंकाराः । अलंकारशब्देन मण्डल(?न)मुच्यते । यदा कुटकादिना पुरुषो मण्डितः शोभामावहेत् तदा एतेरलंकारैः अलंकृता वर्णाश्चा गीतिर्गातॄणां श्रोतॄणां सुखावहा भवति । —*Ibid.*

At the time when Pārśvadeva was writing the ālapti had become very extended in technique. Ālapti according to him is of two kinds, *viz.*, viṣama and prāñjala. This is again divisible into two kinds, *viz.*, sākṣara and anakṣara, and is so of 4 kinds. These 4 varieties become 8, according as they are sung to tālas or not. By belonging to śuddha or chāyālaga, this again consists of 16 kinds. It is to be noted that all these varieties can be recognised in the practice of the present day. The music of the nāgasvara gives the instance of rāgas played according to tāla. The several kinds are explained below:—

The Śuddha viṣama ālapti consists of sthāyi and other varṇas which are clear in all the 3 octaves, various alaṁkāras, gamakas and akṣaras. Its graha and nyāsa are unperceived, and its establishment is viṣama or rugged.

The Śuddha prāñjala ālapti is endowed with the 4 varṇas. It shines by the śuddha rīti or style. It consists of pleasing prayogas in all the 3 octaves and of appropriate nyāsas.

The Sālaka Viṣamālapti does not conform to the rules of sthāna, varṇa and order of repetition. It makes use of beautiful gamakas, alaṁkāras and the proper sthāpanā.

The Prāñjala ālapti in sālaka is characterised by different styles and the essense of the rāga. Its tone is līna, reclining or melting and it is adorned by a sporting and dallying nyāsa.

The Sākṣara ālapti makes use of varṇas like 'tam', 'haṁsā', etc., or the akṣaras used in playing the muraja (a kind of drum), or the akṣaras used in gītas or other akṣaras and countings.

The Anakṣara ālapti is bereft of words.

The Ālapti with tāla has the 3 grahas and the 3 layas, anubjāyi (this is not explained), nyāsa and apanyāsa, and

vikṛtāṁśa laya. A reference about vidārī yati is made which is not clear in the text.

The ālapti without tāla is bereft of tāla and employs the 4 varṇas.

It is remarkable that we have all these kinds of ālapti as defined by Pārśvadeva in one form or another in the practice prevailing now.

Pārśvadeva then refers to varṇas and alaṁkāras.

In the second adhikaraṇa of his work Pārśvadeva explains in detail the technique of ālāpa. His treatment is valuable since he takes notice of the development of the art in various places and as explained by Bhoja, Someśvara, Paramardi, Bharata, Mataṅga, etc. He states that Ālapti is of 2 kinds—Rāgālapti and Rūpakālapti. The first is explained thus. Svarāpāpādika is to be done in the first svasthāna. The form of the rāga in an apasthāna is called vātsurāgottha. The deviation in a note which is stationary and in the svasthāna and where the rāga is beautifully revealed, spoils the charm and introduces the colour of other rāgas. That note is called jīva-svara (life-note) or aṁśa or vādi which among the 7 notes reveals the rāga well.

Anuvādi, saṁvādi and vādi notes are to be used profusely, more profusely and most profusely in their respective order. Vivādis are to be sparingly used. This use of vivādi is interesting since it has been pronounced by different authors to be the enemy of the other notes).

The pracchādana or covering of a note means the omission or removal of a note or the touching of it to a slight extent. When one vivādi note is omitted it is called ṣāḍava, and when two vīvādi notes are omitted it is called auḍava. (This is an interesting view of these terms.)

The establishment of the nyāsa note on the aṁśa is the first sthāyin. This establishment is known as

rāgavaktraka (or the countenance of the rāga). The dvyardha notes, etc., are to be moved above this sthāyin in any note and the rāga again established on the sthāyin. This is the first svasthāna of the ālapti. From dvyardha the rāga is to be moved and established in the second svasthāna. The fourth note from the sthāyin note is dvyardha. It is called devaṭhāya. The notes between the dvyardha and the octave are called ardhasthitas or ardhanīyas. The rāga is to be moved in the ardhasthita and the rāga is to be established on the nyāsa note. When the rāga is moved up to the dviguṇa sthāyin and established on the nyāsa note it is known as the fourth svasthānaka. The form of the śuddha rāga is made of the 4 svasthānas; in each sthāna the notes are to be established gradually in the regular order, with the profuse application of jīvasvaras and groups, ending on the nyāsa note. The Śuddha rāga is thus to be established on the sthāyin note. The flutist should develop the rāga by stressing the rāga in this manner, and the singer should make out the form of the rāga and establish it in the above manner. Rāgālapti has 'Kṣetraśuddhi' and is without tāla. By Kṣetraśuddhi is meant the purity of the rāga. Because the rāga is the origin of gīta (song or prabandha) it is called kṣetra. In rūpakālapti the rāga is briefly developed with tāla and also with titti[?]. By pratigrahaṇa is meant the repeated catching of the sthāyin in the rūpaka in various ways. The above exhaustive treatment of ālapti by Pārśvadeva has a close resemblance to that of Śārṅgdeva but differs in several respects, *viz.*, in the enumeration of more varieties, in the manner of the use of vādi, vivādi, etc., and also in the introduction of new terms like Kṣetraśuddhi, etc.

Before discussing the Saṅgīta Ratnākara, which is outstanding because it contains a digest of the theories of the predecessors of Śārṅgadeva and guides all his successors, it is useful to take account of the contribution of Tamil literature to the theory of ālapti. The Śilappadikāram

and its commentaries are the most important treatises and practically the only books which are available now. Though the original and the commentaries are separated by nearly 1,000 years, and the commentaries reveal the influence of Sanskrit books to a large extent, they can be taken to represent together the Tamil or Dravidian system of music. This system has had very important contributions to make to the present system. In fact, the latter is only a development of the former. In commenting on the verses in Araṅgēṟṟukādai of the Śilappadikāram, Aḍiyārkunallār elaborately explains ālapti or ālatti as he calls it.[1] He states that when first one begins to sing it should be with the consonant 'M' and when the music is developed it is by the use of long and short letters. They are called accu and pāraṇai. Accu is rendered with tāla and pāraṇai with dance. When ālapti is rendered it is by tennā or tenā, or combining them into tennātenā. (These vocalising syllables are important and will be

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1. In this connection he quotes the verses:—

'மகரத்தி னெற்றுற் சுருதி விரவும்
பகருங் குறினெடில் பாரித்து—நிகரிலாத்
தென்னு தெனுவென்று பாடுவரே லாளத்தி
மன்னுவிச் சொல்லின் வகை.'

'குன்றுக் குறிலுந்துங் கோடா நெடிலுந்து
நின்றுர்ந்த மந்நதாந் தவ்வொடு—நன்றுக
ணீளத்தா லேழு நிதானத்தா னின்றியங்க
வாளத்தி யாமென் றறி.'

He enumerates the sthānas and kriyās thus:

பெருந்தான மெட்டாவன: நெஞ்சும் மிடறும் நாக்கும் மூக்கும் அண்ணக்கும் உதடும் பல்லும் தலையுமென விவை. கிரியைகளெட்டாவன: எடுத்தல் படித்தல் கலிதல் கம்பிதம் குடிலம் ஒலி உருட்டு தாக்கு என விவை.

Other interesting details are found in the Arumpadavurai and reproduced by Aḍiyārkunallār; in explaining *கவிஞனமைதி* Arumpadavuraiyār says:

'இசைப்புலவன் ஆளத்தி வைத்த பண்ணீர்மையை முதலும் முறைமையும் முடிவும் நிறைவும் குறையும் கிழமையும் வலிவும் மெலிவும் சமனும் வரையறையும் நீர்மையு மென்னும் பதினெரு பாகுபாட்டினுமறிந்து அவன் அவை தானநிலையில் எய்தவைத்த நிறம் தன் கவியினிடத்தே தோன்ற வைக்க வல்லனென்ற வாறு.'

discussed under Śārṅgadeva). There are 3 kinds of ālatti, *viz.*, Kāṭṭālatti, Niravālatti and Paṇṇālatti. The first is rendered with accu as already stated; the second with pāraṇai without losing colour; the third is rendered solely with reference to the paṇ. There is another lakṣaṇa for ālatti, *viz.*, it is to be rendered with the five vowels long and short. Among the 18 consonants besides M, N and T, no others are used in ālatti. Among these three consonants the Ma variety belongs to śuddha, the Na variety to saraḷaka (or sāḷaka) and the Ta variety to Tamil. The musical sound rising from the Mūlādhāra becomes ālatti, and is called iśai and paṇ. Because it gives colour to the various iyaṟpās, it is called iśai. Because it is rendered in the eight sthānas (like the tongue, nose, lips, teeth, etc.,) and by the 8 kriyās (eḍutal, paḍutal, nalidal, kampitam, kuṭilam, oli, uruttu, and tākku which are named according to their meaning, and which can be taken to be sthāyas or gamakas), it is called paṇ. All this takes one by surprise because these are some of the fundamental factors which determine the ālāpa of Karnātic music at the present day. And many of these details are not mentioned in Sanskrit works. The vocalising syllables 'Tennā tenā' are remarkable for their survival down to the present day. Though the Sanskrit books recognise tennakāra as an aṅga of prabandhas, they do not make it the vehicle of ālāpa as it is done by the Tamil authors[1] (Cf. Śārṅgadeva). The initiating and the closing notes, and the sequence of svaras in the progress of

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1. As contrasted with the Tamil system which lays down the rule that ālapti is to be rendered by the syllables tennā tenā, the Sanskrit texts do not mention any such dictum. Nevertheless, some of them contain valuable references to the letters used in the elaboration of the rāga. For instance Nārada in his Saṅgītamakaranda says that rāgālapti consists of tannana etc. (रागालप्तिस्तन्ननादि). His statement 'रागस्तन्ननतानार्षैरूपतः शब्द उच्यते' can be taken to mean that a rāga, by the use of tannana, tāna and such other vocalising forms, is termed 'Śabda.' This is significant.

Pārśvadeva refers to the letters used in the Sākṣarālapti (*Vide* p. 71) as follows:—

song, were all made the subject of regulation by the Tamil writers.

The Saṅgīta Ratnākara deals with the subject exhaustively and its authority is followed by all subsequent writers. Kallinātha in his introduction to the Jāti prakaraṇa points out that varṇas and alaṅkāras make up the act of singing as much as they adorn it. Śārṅgadeva gives 13 lakṣaṇas for jātis, which are as follows:—

Graha.—This is placed at the commencement of a song. Where either of the graha and the aṁśa is mentioned, it is understood that both are meant. Kallinātha says that therefore in each jāti there are as many aṁśas as there are grahas. Simhabhūpāla in his commentary on the Saṅgīta Sudhākara, asks what the difference is between graha and aṁśa if they are to be employed identically. He answers by saying that by aṁśa the vādi alone is meant, but by graha is meant the 4 kinds of notes called vādi, etc. He adds that the aṁśa is predominant because it generates the rāga and the graha is unimportant; this is the difference. This is an important point.

Aṁśa is defined by Śārṅgadeva as the note which manifests the sweetness of the music, whose saṁvādi and anuvādi are numerous in the vidāri, from which the disposition of the tāra and the mandra prayogas is arranged,

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तं हंशा आदनैर्वर्णैः अथवा मुरजाक्षरैः ॥
गीताक्षरैश्च यद्वान्यैरक्षरैर्गणनैरपि ॥
क्रियते यदि सालप्तिः साक्षरेति निगद्यते ॥

Surprisingly enough Śārṅgadeva says nothing on this topic, but only refers to the absence of akṣaras in gamakālapti.

Somanārya repeats Nārada's definition of Rāgālapti thus: 'रागालप्तिस्तन्नाथैः'

In the Saṅgīta Nārayāṇa, the following interesting statement is made:—

आलापे प्रवेशः वर्णालङ्कारस्तु निरर्थकहुङ्कारादिर्त्याज्यः संगीतोक्तसरिगमेत्यादिवर्णालङ्कारश्च । Defining Śuddha ālapti the author says,

आलापोऽत्र सार्थकपदैरेवेति साम्प्रदायिकाः । हरिनायकस्तु, 'आलापो गमकालप्तिरक्षरैर्वर्जिता मता' इति ।

Evidently here Harināyaka has quoted from the Saṅgīta Ratnākara.

which is its own saṁvādi and the anuvādi of which is a different note, which comes in the capacity of nyāsa, apanyāsa, vinyāsa, sanyāsa and graha, and which is the vādi and numerous in use. Kallinātha shows that the sweetness revealed by the aṁśa is not only that of individual notes but of the entire musical piece, and hence the word 'Geye' is used in the definition.[1] He points out that the copiousness of its use is because of its assumption of the roles of apanyāsa, etc., and quotes Bharata's śloka giving the 10 lakṣaṇas of the aṁśa. Kallinātha also brings out the difference between aṁśa and graha by quoting Mataṅga who says that aṁśa is the vādi alone, while graha can be the other 3 of the 4 varieties vādi, etc. Simhabhūpāla explains that by the vidāri is meant a section of the song, and that its two varieties gītavidāri and padavidāri will be discussed by him in the commentary on the tāladhyāya (which is not available). Śārṅgadeva gives copious usage as the invariable lakṣaṇa of aṁśa.

Tāravyavasthā.—Simhabhūpāla writes a lucid commentary on the original verse treating of this lakṣaṇa. The note which is the aṁśa in the madhyasthāyi is to be taken in the tāra octave, and from it the ascent can be made up to its fourth note, and not above, that being the boundary. Below that the sañcāra can be made according to the option of the singer. Simhabhūpāla says that even omitted notes are included in the tāra octave, and draws attention to

1. The commentary on Kallinātha says:—

'यो रक्तिव्यञ्जको गेये'

रक्तिव्यञ्जकत्वादिधर्मयुक्तो यः स्वरः (स) संगीतभागत्वादंश इति व्यपदिश्यते गेये । रक्तिव्यञ्जक इत्यत्र रक्तिव्यञ्जक इत्येतावत्युच्यमाने स्वरगतरक्तिमात्रव्यञ्जकत्वं स्वरान्तराणाप्यविशिष्टमितीह स्वरसंदर्भभेदप्रतिनियतरक्तिविशेषव्यञ्जकत्वं (त्वस्य) विवक्षितत्वाद्गेय इति विशेणम् .... ।

In this passage Kallinātha explains that if 'aṁśa' is defined as manifesting sweetness without any qualification, its power to manifest sweetness would be applicable to all svaras without any distinction. Hence he points out that by the use of the specifying, adjunct 'गेये' the aṁśa's function of manifesting the peculiar sweetness characteristic of the different groupings of svaras (in the musical piece) is indicated.

Bharata's admission of tāragati till the fourth, fifth and seventh notes.

Mandravyavasthā.—Simhabhūpāla explains that from the aṁśa of the middle octave the descent should be made down to the aṁśa in the mandra octave, or up to the nyāsa or the notes Ri or Dha in the mandra octave. Within these limits the sañcāra is optional.

Nyāsa is used at the close of a song. According to Kallinātha this note brings the song to a close by its own authority and independently of other factors. Simhabhūpāla writes that the song closes on or with this note.[1]

Apanyāsa closes the vidāri or the limb of the song. According to Kallinātha this resembles nyāsa by its closing the intermediate divisions of song. Simhabhūpāla quotes Mataṅga in support.

Sanyāsa.—This is a note which is not a vivādi of the aṁśa and this closes the first vidāri. Simhabhūpāla quotes Mataṅga to this effect.

Vinyāsa exists on the sides of the parts of vidāris. Kallinātha points out that vinyāsa is the note used at the margin of groups of notes which are varṇas and alaṅkāras and parts of vidāris. Since the vinyāsas could be any note which is not a vivādi, their number is not given.

Bahutva is of two kinds, namely, by alaṅghana and abhyāsa which are synonymous with vādi and saṁvādi respectively. Kallinātha says that laṅghana means the touching of a note very slightly and the incomplete manifestation of the note. The reverse of this is alaṅghana, *i.e.*, producing the note in all its fullness which is one kind of bahutva. The other is got by the constant or frequent repetition of the note.

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1. गीतजात्यादिप्रयोगे समाप्तिकृच्चिरपेक्षावसानकारी स्वरो न्यासः। —Kallinātha.
यस्तु गीतसमापकः गीतस्य जात्यादेः अन्ते तिष्ठति स न्यास इत्युच्यते। न्यस्यते क्षिप्यते यस्मिन् येन वा गीतमिति न्यासः। —Simhabhūpāla.

Alpatva is achieved by anabhyāsa and laṅghana which are the exact opposites of abhyāsa and alaṅghana defined above. Anabhyāsa is held to be applied to notes which are not aṁśas and which are to be omitted. Śārṅgadeva says that the touching of a note slightly is laṅghana, and is often applicable to lopya or omitted notes. Simhabhūpāla in his commentary adds that it is the view of some that laṅghana is applied also to notes which are not aṁśas.

Antaramārga is used generally in Vikṛtajātis. Kallinātha explains that this results from the varied and beautiful combinations with aṁśa, graha, apanyāsa, etc., (in āroha, avaroha, etc.,) of notes which are applied in the two kinds of alpatva and which abandon their allotted places of nyāsa, apanyāsa, vinyāsa, sanyāsa, graha, and aṁśa, but come in between any two of them. These combinations are beautifully equipped with tānas, etc., and consist in some places of anabhyāsas, and in some other places of laṅghanas.

By Ṣāḍava is meant a prayoga of 6 notes. Kallinātha says that among the 7 notes, when a note is omitted according to the rule of lakṣaṇa, the music got out of the remaining 6 notes is ṣāḍava. Simhabhūpāla is of the opinion that this combination of 6 notes is called ṣāḍava because it protects (reveals by emphasis) the jātis, etc.[1] It is also interpreted as a combination made out of 6 notes. Similarly auḍava means a grouping of 5 notes.

It will be found that almost all these lakṣaṇas, except those which are peculiar to the music of the jātis, are features of the present day music. Mataṅga's assignment of the 10 lakṣaṇas to rāgas remain almost intact even to-day.

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1. 'सप्तसु स्वरेषु लक्षणवशादेकस्मिंस्त्यक्ते तदितरषट्स्वरप्रयोगप्रपञ्चवशाज्जातं गीतं षाडवाख्यव्यपदेशवदिति' —Kallinātha.

षट् मिलित्वा ये प्रयोगं जात्यादि अवन्ति रक्षन्ति ते षाडवाः स्वराः
—Simhabhūpāla.

In the Rāgavivekādhyāya, Kallinātha begins with the remark that the 10 kinds of rāgas derive their name from their characteristic of pleasing[1] and quotes Mataṅga's definition of 'rāga'. Grāmarāgas are divided into 5 classes according to the 5 gītis. Among them the Śuddha gīti consists of straight and smooth svaras; the Bhinna of subtle and crooked notes and sweet gamakas; the Gauḍi of deep notes with gamakas in the three octaves and svaras sportive with uhāṭī (this according to Kallinātha indicates mandra notes); and the Vesara of restless movement in all the three octaves, with uhāṭī kampitas, notes in the mandra octave, and quick movement. The Sādhāraṇa shares all these characteristics. These gītis have their application to notes and are different from Māgadhī and other gītis which are mainly concerned with pada and tāla. Kallinātha points out that Śārṅgadeva has defined the five gītis according to the view of Durga. He refers to the gītis mentioned by Mataṅga and Bharata.

In the second prakaraṇa of the Rāgādhyāya, ālāpa, etc., which are common to all the rāgas are stated. Śārṅgadeva defines that in rāgālāpa is found the manifestation of graha, aṁśa, mandra, tāra, nyāsa, alpatva, bahutva, ṣāḍava and auḍava.[2] Kallinātha commenting on this says that only the lakṣaṇas already defined have their application in the piece of music alluded to. This distinguishes ālāpa from prabandha consisting of dhātu and

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1. दशविधानाम् एतेषां रागत्वं रञ्जनात् । Kallinātha.

For Mataṅga's definition, Vide Note 2. Page 65.

2. ग्रहांशमन्द्रतारााणां न्यासापन्यासयोस्तथा ॥
अल्पत्वस्य बहुत्वस्य षाडवौडवयोरपि ॥
अभिव्यक्तिर्यत्र दृष्टा स रागालाप उच्यते ॥ —Śārṅgadeva.

Explaining the passage Kallinātha says:—

तेषां ग्रहांशादीनामेवाभिव्यक्तिः स्वरूपप्रकाशनमाविर्भाव इत्यर्थः । न तु स्वरूपप्रकटाकरणमात्रम् । .... । साभिव्यक्तिर्दृष्टा ज्ञाता भवति । .... । स स्वरसंनिवेशविशेषो रागालाप इत्युच्यते ।

aṅgas. Kallinātha points out that by the 'abhivyakti' of the rāga is meant the 'āvirbhāva' or complete exhibition of graha, aṁśa, etc., and not merely the manifestation of the form of the rāga. The latter is the characteristic of ālapti which is defined elsewhere and from which ālāpa is distinguished. The assemblage of the notes defined above is rāga-ālāpa.

Rūpaka is the same as ālāpa, but in it the pieces or parts or divisions of music are separately sung. That is to say, Kallinātha states, the ālāpa proceeds in its entirety without stopping at the apanyāsas. (It is a whole, and not divided into parts). The same ālāpa when it pauses again and again over the apanyāsas and proceeds thus, it is known as the rūpaka.[1] By this we understand that the ālāpa was used to indicate the elaboration which gave the impression of the rāga as a whole and the rūpaka to indicate the elaboration of the rāga in detail by the individual treatment of its numerous vidārīs.

Śārṅgadeva defines 'Ākṣiptikā' as made up of svaras and padas, sung according to Cañcatpuṭa and other tālas, and adorned by the three mārgas. The 'pallavi' receives similar treatment at the present day. Kallinātha states that this is a variety of nibaddhagīta. In it any one of the mārgatālas is applied. In this is used one of the three mārgas, viz., citra, etc., and this is sung according to the rules applicable to jātis. The svaras sa, ri, etc., and words are arranged in it. Because the padas and tālas are thrown up, as it were, it is named 'ākṣiptikā'. This is so considered by Mataṅga and others.

For some of the rāgas karaṇa and vartanī are given, and these are defined under prabandhas since they are variations of the latter. Śārṅgadeva says that according to Mataṅga and others rūpaka is used only for bhāṣās,

1. अपन्यासेष्वविरम्यैकाकारेण प्रवृत्त आलापः । स एव अपन्यासेषु विरम्य प्रवृत्तं रूपकमिति । —Kallinātha.

vibhāṣās and antarabhāṣās. Kallinātha infers that they are not used in grāmarāgas and rāgāṅgas.

In giving rāgaprastāras, Śārṅgadeva uses different names for the divisions of ālāpa. They are of great interest. For Śuddhasādhārita he gives ālāpa and karaṇa; for Śuddhakaiśika, ālāpa and vartanī (or vartanikā as it is called elsewhere); for Rūpasādhāra, ālāpa, karaṇa and again ālāpa; for Nartharāga two kaṛaṇas; for Revagupta, ālāpa, second and third karaṇas; and for Travaṇā, ālāpa and rūpaka.

In commenting on Śuddhakaiśika, Kallinātha quotes Mataṅga's dictum distinguishing 'rāga' from 'gīta' namely, that 'rāga' is the combination of notes according to the 10 lakṣaṇas—graha, aṁśa, etc., and that gīta means Dhruva, etc., consisting of those svaras, and also tālas, parts and four aṅgas.

Kallinātha makes very important observations concerning the lakṣaṇas of the Deśī rāgas current in his time. (They are significant from the fact that he wrote two centuries after Śārṅgadeva. He added a list of Deśī rāgas in his commentary and he represents the art of the Vijayanagar empire). According to him wherever tāra and mandra rules are not mentioned, the sañcāra is unrestricted. His remarks about the distinction between Ṣaḍja and Madhyama grāma rāgas are of immense importance since they explain the progress of the art from grāma music to the music of the present day. He points out the various differences between the practical and theoretical aspects of Deśī rāgas and he, 'knowing the truth about the views of Mataṅga and others', as he says, writes to reconcile these differences. Because they are Deśī it is not a flaw if they do not conform to rules. They derive their title 'Deśī' because their development is according to the will of the singer and their one effect and aim is the delighting of the minds of the people in different countries.

In this connection Āñjaneya is quoted as saying that Deśī rāgas do not conform to the rules of śruti, svara, grāma, jātis, etc., and that they take the complexion of the modes of different countries. Kallinātha says that in vādya and nṛtya also similar sañcāra or elaboration at will results in their becoming Deśī. If they are restrained by rules, the gītas become mārga.[1]

Ālapti.—Rāgālapana, according to Śārṅgadeva, is ālapti or the manifestation of the rāga. It is of two kinds, according as it pertains to rāga or rūpaka. Kallinātha very elaborately discusses the etymology of the word ālapti and arrives at the conclusion that when 'ālapana' indicates primarily 'disappearance' (Tirobhāva) it means the same thing as ālapti: when it indicates 'manifestation' (āvirbhāva) it is synonymous with ālāpa. According to the context, he points out that prakatīkaraṇa conveys the same sense as ālapti: it means that the apprehension of the rāga is possible to some extent. Ālapana also denotes the same thing. In other words he says ālapti and ālapana are synonymous and a rāga, manifest already, is hidden by the use of a beautiful variety of varṇa, alamkāra, gamaka and sthāyas in profusion; prakaṭīkaraṇa indicates this 'concealment' of the manifestation of the rāga.[2]

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1. In commenting on the definition of melāpaka, a vādya prabandha, Kallinātha states that the exponents of mere lakṣya (as opposed to lakṣaṇa) were known as विद्यावन्तः, and adds that they were called विद्यावन्तरु by the Karṇāṭas (विद्यावन्तः केवले लक्ष्यप्रोक्तारः। तानेव लाके 'विद्यावन्तरु' इति कर्णाटा वदन्ति।). The use of the Kanarese synonym is very interesting and shows that the distinction between Lakṣaṇa and Lakṣya (in other words mārga and deśī) was as live an issue in Kallinātha's time as ever.

2. 'रागालपनमालप्तिः प्रकटीकरणं मतम।
सा द्विधा गदिता रागरूपकाभ्यां विशेषणात्॥ —Śārṅgadeva.

In his commentary on this verse, Kallinātha states:—

....आलपनमालप्तिरिति वालपनमालाप इति वा व्युत्पादयितु शक्यते नान्यथेति गतमेतत्। .... अत्र प्रकृतत्वाद्रागस्य प्रकटीकरणमिति गम्यते। रागप्रकटीकरणमप्यालप्तित्वेन संमतमित्यर्थः। प्रकटीकरणमित्यत्र प्रकटेति क्वेरभूततद्भावार्थत्वात् किञ्चि-

Rāgālapti is independent of rūpaka (which is a prabhanda). It has 4 svasthānas, which are the places of rest for rāgālapana, like mukhacāla, etc.

That note is called sthāyin where the rāga is established. Kallinātha shows that it can be one of the 7 notes of the octave and is the aṁśa svara of the rāga. The 4th note from it is called Dvyardha and Kallinātha reckons it as the 4th in ascending order, including even a varjya note when there is one. Movement (cālanam which means 'display') below this dvyardha is called mukhacāla. This is the first svasthāna; movement in the dvyardha svara with nyasanam (or reaching the nyāsa) is the second. The 8th note from the sthāyisvara is called the dviguṇa, and the notes between the dvyardha and dviguṇa are called Ardhasthita. Movement in the ardhasthita with nyāsa is the third svasthāna and movement in the dviguṇa is the fourth. Rāgālapti consists of these four svasthānas.

Explaining the foregoing definitions by Śārṅgadeva, Kallinātha says that, in the first svasthāna not only the notes below the dvyardha down to the sthāyin but also those below the latter are used, since the rāga is not manifested in a single note. By the cālana of mukhacāla is meant the singing or playing of each rāga with its appropriate gamaka like sphurita, kampita, etc. By all this is indicated the singing by beginning at the sthāyin, and making the dvyardha the limit, using all the notes below it in whichever way is suitable and making the sthāyin the final, *i.e.*, closing on that note. The second svasthāna

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त्प्रतीयमानार्थत्वं विवक्षितम् । आलपनमित्यत्रापि तिरोभावस्याप्रकटार्थावरणरूपत्वात्तत्रापि किंचित्प्रतीयमानार्थत्वं विवक्षितम् । तेनोभयत्रापि फलभूतं रागस्य किंचित्प्रतीयमानत्वमेवालप्तिशब्दप्रवृत्तौ निमित्तमित्यवगन्तव्यम् । तथा हि—आलप्तौ प्रकारद्वयं न च (तच्च) पर्यायेण संभवति । यदा तावदाविर्भूतस्य रागस्य विचित्रवर्णालंकारगमकस्थायप्रयोगमार्गभेदेन तिरोभावः क्रियते तदा आलप्तिशब्दसमानार्थता । यदा त्वत्र तस्य रागस्य तादृशेनैव प्रयोगभेदेन तद्भावः संपद्यते तदा प्रकटाकरणशब्दसमानार्थता चेति रहस्यमेतत् ।

is the same as the first except in that it includes the dvyardha also in the cālana. The third svasthāna excludes the dviguṇa and covers all the notes below it, closing on the sthāyin. In the 4th svasthāna, the dviguṇa is meant to include the notes above it also. All of them are made use of and the sthāyisvara is the closing note.

Śārṅgadeva concludes rāgālapti by remarking that the establishment of the rāga (the 'sthāpana' of the rāga) is accomplished by the limited use of sthāyas, bright, varied and permeated by the jīvasvara or aṁśa.[1]

Kallinātha says that the import of the above passage is that by the application of the 4 svasthānas and by the use of a few rāga avayavas (limbs of rāga) in the elaboration of the rāgālapti, the rāga is made manifest instantly, and this manifestation only reveals the rāga to a limited extent because of the use of sthāyas which are common to other rāgas. The expression of the rāga is only partial.[2] He illustrates this by the following two examples:—When one Devadatta comes towards an assembly his personality is clearly manifest, but when he sits in the assembly his form is concealed by being mixed with the likeness of dress, language, etc., of others and he is said to be manifest to a limited extent. Again when a pearl assumes the colours of the different gems with which it is woven, its manifestation is said to be partial.

Rūpakālapti is executed by the tāla and rāga of the rūpaka and is of two kinds, namely, pratigrahaṇikā and bhañjanī. The former consists of first rendering a part of rāgālapti and then taking up any desired part of a prabandha (rūpaka), suited to the sthāya treated. Bhañjanī

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1. स्तोकैस्तोकैस्ततः स्थायैः प्रसन्नैर्बहुभङ्गिभिः ॥
जीवस्वरव्याप्तिमुख्यैरागस्य स्थापना भवेत् ॥ —Śārṅgdeva.

2. उक्तस्वस्थानचतुष्टयप्रयुक्तायामालप्तावुक्तलक्षणैः स्वल्पै रागावयवैर्विस्तार्यमाणाया-मापन्नतोऽभिव्यक्तस्य रागस्य रागान्तरसाधारणस्थायादिप्रयोगात् स्वरूपान्तरेऽभावे सति किंचित्प्रतीयमानता भवेदित्यभिप्रायः । —Kallinātha.

is of two kinds:—(1) Sthāyabhañjanī. This consists of the varied treatment of the sthāya (or limb) of the rūpaka according to the value of the viśrānti or rest belonging to the padas or intermediate (vidārī) divisions of the rūpaka. (2) Rūpakabhañjanī consists of elaborate and varied treatment of the entire rūpaka including all those intermediate divisions or limbs of the prabandha according to the time measure given above. Kallinātha explains that the variegations referred to indicate the adoption of some alien Dhātu in the places of the Dhātu concerned. When the entire prabandha is rendered by a repeated use of parts in which the ṭhayas and sthāyas concerned are replaced by other suitable gamakas, etc., it is known as the rūpakabhañjanī. This replacement indicates the variety. In the Rūpakālapti, Kallinātha sums up, the rāga is partly manifested through sthāya, pratigraha and bhañjanī. It is as when Dēvadatta, unmanifest in an assembly, becomes somewhat manifest when he goes about on some errand, or as when a pearl, woven with gems of different colours, becomes manifest to a limited degree.

Summing up, Śārṅgadeva defines ālapti, as endowed with varṇa and alaṅkāra, adorned by gamakas and sthāyas, and charming by the variety of its treatment. Kallinātha explains that the ālapti, by means of the four svasthānas, reveals the rāga here and there and conceals it, as a maiden, adorned by varṇa, alaṅkāra, etc., shows and hides her features before her lover. The concealed rāga is brought out by pratigraha and bhañjanī. The ālāpa always brings out the rāga as a male displays his whiskers, etc. Ālāpana or ālapana, like a hermophrodite assumes the nature of both ālapti and ālāpa.[1]

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1. वर्णालंकारसंपन्ना गमकस्थायचित्रिता ॥
आलप्तिरुच्यते तज्ज्ञैर्नरिभङ्गिमनोहरा ॥ —Śārṅgadeva.

यथा वर्णालंकारादिसंपन्ना कामिनी कामुकदर्शने . . . . . स्वाङ्गं किंचिद्दर्शयत्येवं सविकासं तांस्तरोभावयति कदाचित्तिरोभूतं तदेव सव्याजं प्रकटीकरोति तथोक्तलक्षणा आलप्तिरपि

In the Vādyādhyāya, Śārṅgadeva notices the disagreement between practice and theory and observes that the arts are always influenced and dominated by practice. He lays down the rule that the regulations regarding graha, aṁśa, and nyāsa only are determined according to śāstra or textual authority. The combination of other notes (Kallinātha explains them as meaning apanyāsa, etc., including antaramārga) is taken according to practice and this is not contrary to śāstra. The differences between practice and theory in Deśī rāgas are to be reconciled in this manner in all cases, according to Śārṅgadeva. Kallinātha explains that by Deśī rāgas are meant rāgāṅga, bāṣāṅga, kriyāṅga and upāṅga rāgas. Only among them is this reconciliation allowed. Among mārgarāgas like grāmarāgas, etc., lakṣaṇa or theory is dominant.

It is unnecessary to say that instrumental music had at that time reached a very high state of development. Śārṅgadeva treats about it in a very exhaustive manner in the Vādyādhyāya. Instrumental music was considered to be a complement and also an aid to vocal music. We can identify many of the features of the practice of the present day as having been in vogue then. The flutist is directed to present first the tānas of the rāga which the vocalist is to sing; he is to conceal the defects of vocal music, so that the rāga may not seem to be spoiled for the listener. By his skill he should manifest the rāga even in apasthānas (those that are not svasthānas, defined already) as he would in the svasthānas like mukhacāla, etc. Gamakālāpa in an asthāna was considered to be a deed of great skill. This gamakālapti was an ālāpa without akṣaras or

स्वस्थानचतुष्टयैश्च तत्र तत्र रागं किंचिद्दर्शयन्ती तं तिरोभावयति । कदाचित्तिरोभूतं तमेव प्रतिग्रहभञ्जनीभ्यां तत्र तत्र रागं प्रकटीकरोतीति । स एष प्रतिभाविषय एवार्थः । आलापस्तु पुमाञ्छ्मश्रादिकमिव सदा रागमाविर्भावयति । नपुंसकमिव आला(ल)पनं तदुभयसाधारणस्थितिं दर्शयतीति सूक्ष्मेक्षिकयावगन्तव्यम् ॥ Kallinātha.

letters and otherwise called prayoga.[1] The vīṇā was considered to be second only to the voice but the lutists are taken to task by Śārṅgadeva for having deviated from the lakṣaṇa in many rāgas. The mardala or drum was used in ālāpa. As ālāpti was rendered without false notes in the three octaves, so also on the mardala, sthāpana has to be rendered, purely and without overlapping, in the three sthānas, in vilamba, madhya and druta speed. Kallinātha adds that sthāpana otherwise is rendered according to ālāpa. The drummer should play on the drum in agreement with the rāgālāpa, and frequently in the course of it should beautify it with his play. At present the rāgālāpa by the nāgasvara player is similarly accompanied by the 'tavil'.

All subsequent development in the theory and the practice of the ālāpa has proceeded along this system expounded by Śārṅgadeva. It remains to deal with the vocalising syllables used in ālāpa. It is remarkable that while the Tamil writers give the various syllables to be sung in ālāpa which tally with modern practice, the Sanskrit writers do not give similar information under this heading. So we have to make inferences with the data we have. One kind of ālāpa, we found, made use of pada and tāla and this is a convenient group since the padas or words are clear and offer no problem. But we must know how the ālapti without words was sung. Probably it was with the syllables mentioned by the Tamil books, because they are musical, but there is no authority to prove this. We find in the singing of the Kapāla padas mentioned by Śārṅgadeva the syllables hau, jam, hrīm, raum, haum, hum, ka, ha, kaha, and bhuṇṭam or jhuṇṭum, were used besides the regular words of the

1. Kallinātha explaining the passage quotes:
आलापो गमकालप्तिरक्षरैर्वर्जिता मता ।
सैव प्रयोगशब्देन शार्ङ्गदेवेन शब्दिता ॥

song.[1] Nānyadeva in his Bharata Vārtika similarly deals with the subject. These seem to be the survivals of the vocalising devices of the music of an older epoch. In the chanting of the Sāma Veda we find among others the following stōbha padas used:—

Auhōvā, iḍābhā, āyiḍā, iyā iyā, ā, āi, hāi, āu, hāu, ō, ōi, hōi, vōi, mōi, hum, ēhiyā, up, has, bibi, hi, hāuvā, yē, yā, hā, ham, ha, hī, ya, va, ba, i, u, ōm, iḍā, nam, sam and nṛmṇē nṛmṇam.[2] Some of these syllables can be seen to be used in the Sūlādi prabandhas of the present day. In the chant of the Gāthās in the Vedic period syllables like 'hillu, hillu', 'haimahā' were used.[3] Coming to modern times interesting information in this connection is given by the Gītaprakāśa, which may be taken to be representative of similar authorities. In dealing with the prabandhas sung to the Maṇṭhatāla, the author gives the following grouping of syllables to be sung after the sāhitya, *viz.*, Āi - Āi - Ā - iā iā - iā - ā - iā - iā iyā - tiyā - oī - ō - ā - ā - ā - ā|| ā - ā - ā - ī - ā - ā -ā - ō - ō - ā - ā - ō - ā|ā - ī - ð - ō - ī - ōī - ā - ā - re. These are explained by the author to be meaningless words used for endowing the Gīta sung to a tāla with grace and loveliness. The word 'Arē' is also used.[4]

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1. हौ, जं, हीं, रौं, हौं, हूं, क, ह, कह, भुण्टं भुण्टं and also झुण्डुं.

2. औहोवा - इडाभा - आइडा - इया इया - आ - आई - हाइ - आउ - हाउ - ओ - ओइ - होइ - वोइ - मोइ - हुं - एहिया, उप् - हस् - बिबि ही - हाउवा - ये या - हा - हं - ह - हि - य - व - ब - इ - उ - ओं - इडा - नम् - सम् - नृम्णे नृम्णम् - इत्यादि ।

3. ननु गावो मङ्कीरस्य गङ्गाया उदकं पपुः ।
पपुः सरस्वतीं नदीं प्राचीं चोज्जगाहिरे ॥
—हैमहा - इदं मधु - हिल्लु हिल्लु— —संवत्सरगाथा

4. मण्ठलक्षणोदाहरणं गीतम् । द्वारावतीपुरमनुबलसंयुत उद्धवसहितो नियतमवं अक्रूरोत्तमसचिवो नन्दकनिरुपम सामितिति आइअ आरे । मुकुन्दनृपति राजति आविपुला भंजित या हरिचरितम् हन्तमनिखिलमनुकरोति आइ आइ आ इआ इआ इआ आ इआ इआ इया तिया ओई ओ आ आ आ आ ॥ आ आ आ ई आ आ आ ओ ओ आ आ ओ आ । आ ई ओ ओ ई ओं ई आ आ रे । इत्यादयो निरर्थकाः शब्दाः सोतालगीतलालित्यार्थः प्रयोक्तव्याः . . . . । —गीतप्रकाशः

Another important group of vocalising syllables used is dealt with in the Prabandhādhyāya by Śārṅgadeva. Among the 6 aṅgas of the prabandha namely, svara, biruda, pada, tenaka, pāṭa and tāla, tenaka is important in the present context.[1] 'Tena' is taken to express auspiciousness. Śārṅgadeva explains that tenapāṭa is a grouping of akṣaras used in instrumental music. This heightens its importance. Tenakas are extensively used in prabandhas. In Nānyadeva's Bharatavārtika, Karṇapāṭatāna and other similar pāṭas are given as well as tēnakas. In my opinion they have survived till the present day. Now they exist in the form of 'tānam' singing. The tenakas used according to tāla in prabandhas must have been employed in ālāpa without tāla and gradually become the tānam familiar to us. To support this view in some places in Malabar and elsewhere and among vidvāns of the old type who represent classical tradition, we find the practice of singing tānams according to tāla. (The term 'Tena' is also used in some of the prevalent prabandhas). 'Tānam' (in the modern sense of the term) is not mentioned in the Sanskrit books but the syllables given by Aḍiyārkunallār as sung in ālatti can be combined to form the word 'tānam'. In Tamil ālatti the syllables 'tennā tenā' are used, and they resemble tena very closely. Putting these facts together it is possible to infer that the word 'tena' which is of hoary age has been extended from its use in the prabandhas and utilised in ordinary ālāpa (without tāla); and that by the authority

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1. प्रबन्धोऽङ्गानि षट् तस्य स्वरश्च बिरुदं पदम्।
तेनकः पाटतालौ च प्रबन्धपुरुषस्य ते ॥
भवन्त्यङ्गवदङ्गानि मङ्गलार्थप्रकाशिके ॥
....
तेनेति शब्दस्तेन स्यान्मङ्गलार्थप्रकाशकः ॥
....
तदिति ब्रह्म तेनायं ब्रह्मणा मङ्गलात्मना ॥
लक्षितस्तेन तेनेति पाटो वाचाक्षरोत्करः ॥

—संगीतरत्नाकरः

of convention it has become converted into the syllable 'tānam' which is now interpreted as being a transformed and abbreviated form of the word 'ananta'. The 'tānam-singing' now preserves two features which have come down from the old theorists, *i.e.*, it is a development of 'tena-singing', and the tāla regulation of the tena now features as the arrangement of the tānams in a rough kind of rythmic groupings.[1]

Haripāla, the next writer to be considered here, in his Saṅgītasudhākara gives the limbs (avayavas) of jātis as 15. They are as follows:—

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1. Even Veṅkaṭamakhin sticks to the old definition of 'tāna' as indicating the elaboration of notes. His definition of the 'Suddha tāna' as expressing one single rāga, and of 'kūṭa tāna' as manifesting the identical aspect of a pair of rāgas is interesting. He writes as follows:—

"निरूप्यतेऽधुना तानः स्वरविस्तारलक्षणः ।
तानो द्विधा शुद्धतानः कूटतान इति क्रमात् ॥
एकैकरागमात्राभिव्यक्तिसंपादकस्तु यः ।
स शुद्धतान इत्युक्तः कूटतानः स उच्यते ॥
यस्तु रागद्वयस्फूर्तिसाधारणतया स्थितः ॥"

The author of the Saṅgīta Kaumudī (circ. 1900 A.D.) states that the Rāgālāpanam is to be rendered by beginning in the madhya octave, and then proceeding to the tāra octave. Next the sañcāra is to be carried on in the madhya and mandra octaves and finally in the madhya octave. The Bhāvas and mūrchanās appropriate for the rāga as well as the three kālas, vilamba' madhya and druta should be used. 'Tahanam' (the popular term for 'tānam' accepted by the author) is explained thus:—

नाटरागं समारभ्य मन्द्रे स्थाने तथैव च ॥
मध्यमे तारके चैव स्थाय्यामपि यथाक्रमम् ॥
संचार्य मध्यमस्यैव कालस्याकारकैस्तथा ॥
अनन्तत्वमितीशस्य नामोच्चार्य पुनः पुनः ॥
तत्तद्रागस्य संप्रोक्तान् रागभावांश्च मूर्छनाः ॥
तत्तत्स्थानेषु च व्यक्तं यद्गीतं गायकोत्तमैः ॥
तन्नाम तहनं चेति प्राह मे पार्वतीपतिः ॥
द्वात्रिंशद्घनरागाश्च एवं गेयाः क्रमेण वै ॥

The tahanam (tānam) is to be sung in the 3 octaves by the frequent use of the word 'ananta' (a name of God) with the aid of the letter a, in the madhya kāla. The proper bhāvas and mūrchanās of the rāga should be expressed. This method is common for the 32 ghanarāgas (enumerated by the author). This definition serves to explain what is at present rendered as 'tānam' (or colloquially 'tahanam').

Graha is the note sung at the commencement of the song. Aṁśa is the same note sung repeatedly. Haripāla differentiates the graha from the aṁśa by the plurality of the use of the latter; and while the form of a graha is single, *i.e.*, whereas it is confined to one note, the aṁśa's forms are numerous. The nyāsa note returns after repeatedly touching its upper note. The apanyāsa note maintains the colour or form of the rāga which is rendered. The vidārīs are met with in the middle of the nyāsa and the apanyāsa. When the aṁśa is used only two or three times it is known as alpatvam; when the aṁśa is used many times it is known as bahutvam. Graha and apanyāsa, he says, are of the same form. The singing of the higher notes is called tāra, and the singing of the lower notes mandra. Ṣāḍava is the use of 6 notes, auḍava of 5, khaṇḍa of 4, ardhakhaṇḍa of 3, and kuśa is the use of 2 notes (this is also spelt in the original as kṛśa, which seems to be right as indicating the small number). The varṇas and 33 alaṁkāras are mentioned by Haripāla. The 4 kinds of notes are interpreted with reference to the rāga. Vādi is used plentifully in the place of the note (svarasthāna). The saṁvādi is that which does not break or mar the rāga. When a note is used in agreement with the rāga but which is found in another rāga it is anuvādi. If a note mars the rāga which is rendered it is called vivādi. With the foregoing account is to be compared the definition of Śārṅgadeva.

According to Śārṅgadeva the note which is profusely used is vādi. Two notes separated by 12 or 8 śrutis are saṁvādis. Ni and ga are vivādis of other notes or of ri and dha. The other notes are anuvādis.[1] Simhabhūpāla

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1. श्रुतयो द्वादशाष्टौ वा ययोरन्तरगोचरः ॥
मिथः संवादिनौ तौ स्तो निगावन्यविवादिनौ ॥
रिधयोरेव वा स्यातां तौ तयोर्वारिधावपि ॥
शेषाणामनुवादित्वं ... ... ॥ —संगीतरत्नाकरः

in his commentary explains that the vādi is synonymous with the aṁśa and that this brings out the individuality of the rāga. He points out that Mataṅga and Dattila separate saṁvādis by 13 and 9 śrutis, and that they may be taken to include the saṁvādi śrutis also and that hence the two views are reconcilable. Discussing the use of the saṁvādis, he gives several instances to show that when a note is the aṁśa in a song its saṁvādi can take its place without injuring or marring the rāga. He points out that Mataṅga gives the notes separated by two śrutis as vivādis. According to Simhabhūpāla the state of vādi, saṁvādi and anuvādi is destroyed by the vivādi. He explains that the anuvādi establishes or fulfils the rāga which emerges by means of the vādi, etc. Vādi is compared by Śārṅgadeva to the ruler of a kingdom, the saṁvādi to his minister because it supports the former, the vivādi to an enemy, and the anuvādi to the servant as it subserves the king, and the minister. Mataṅga's explanation of the terms is given by Simhabhūpāla (as shown above).

According to Śārṅgadeva the regular ascent and descent of 7 notes is mūrchanā.[1] These are 7 for each grama. Tānas are mūrchanas with 5 or 6 svaras. The complete and incomplete mūrchanās by being permuted in irregular order become kūṭatānas. The method of calculating their total number is given. Simhabhūpāla points out that the mūrchanās are used in the jāti rāgas and bhāṣās, etc., and that the tānas are used to get the difference of the jāti rāgas as between the two grāmas.

To return to Haripāla, he quotes Tumburu as stating that the mūrchanā is the smoothness of the śrutis. This can be interpreted as the soft intonation of the śrutis or the smoothness of their effect on the ear. Haripāla also

1. क्रमात् स्वराणां सप्तानामारोहश्चावरोहणम् ॥
मूर्छनेत्युच्यते ग्रामद्वये ताः सप्त सप्त च ॥
—संगीतरत्नाकरः

quotes Kōhala as saying that the mūrchanā makes the mind of the singer and the listener bathe in the nectarean lake of the rāga.[1] The names and forms of the mūrchanās, he says, are not repeated by him as they are of fixed form and have been described by other authors. What is striking here is that the definition of the mūrchanā shifts the emphasis of the term from a grouping of seven notes to their musical effect. By mūrchanā we mean to-day the colour of the rāga as embodied in a prayoga and not so much the number or mode of ascent or descent of the notes. To-day we do not mean by the mūrchanā the regular ascent and descent of seven notes in a rāga. This is noteworthy. The ascending order of notes alone according to Haripāla is called tāna. These definitions are peculiar to the author.

Lakṣmīnārāyaṇa in his Saṅgīta Sūryōdaya follows Śārṅgadeva in defining mūrchanās and tānas. He gives the mūrchanās of the Gāndhāragrāma also. Among tānas besides ṣāḍava and auḍava he gives ārcika, sāmika, and svarāntara. The varnas and alaṅkāras are mentioned by him as well as the 13 lakṣaṇas of the jātis according to Śārṅgadeva.

In the Gītaprakāśa the excellences of song are given. Graha, laya, yati, mānam, etc., are mentioned. The music originating merely on the notes is called Dhātu. Mātu indicates the sāhitya. The author calls the sweetness of the rāga obtained (on the strings) in the 3 octaves by the name 'Rāga Ramyam'. He mentions śuddha and vikṛta jātis, and he is to be understood as implicitly accepting the jātilakṣaṇas. For rāgas he mentions aṁśa, lōpya-svaras, etc.

Rāmāmātya in his Svaramelakalānidhi does not deal separately with rāgalakṣaṇa, but makes mention of a few

1. श्रुतेर्मार्दवमेव स्यात् मूर्छनेत्याह तुम्बुरुः ॥
गायतां शृण्वतां चापि भवेद्रागामृते हृदे ॥
मनसो मज्जनं यत् स्यात् मूर्छनेत्याह कोहलः ॥ —Haripāla.

lakṣaṇas in a verse which can be translated thus:—'All the Deśī rāgas originate from the Ṣaḍjagrāma. In these (Deśī) rāgas, because they are Deśī, the graha, aṁśa, nyāsa, mandra, etc., and the division into ṣāḍava, auḍava and pūrṇa may, or may not occur (*i.e.*, they are not governed by any fixed rule)."[1] Nevertheless he gives the definition of a number of uttama, madhyama and adhama rāgas, following the theory and practice of music, as he says. In giving the lakṣaṇas of rāgas he does not mention anything beyond graha, aṁśa and nyāsa. A peculiarity of the rāgas is that the majority of them have ṣaḍja for all the three lakṣaṇas. We are left to infer that, since the apanyāsa, vinyāsa and sanyāsa are not mentioned, these were not looked upon as important and that these were not given the same authority as in the 'grāma' music of the jātis. But such indispensable and easily definable lakṣaṇas like the alpatva, bahutva, tāra, mandra, etc., might have been given for the rāgas. This lack of completeness in definition we find in almost all of the writers of this and subsequent periods.

Sōmanātha bases his exposition of this subject on the principles enunciated in the Ratnākara. Like Rāmāmātya he divides rāgas into uttama, madhyama, and adhama. The uttama rāgas according to him are fit for ālāpa, ālapti, and the rendering of the prabhanda called vastu. He defines ālāpa as consisting of the manifestation of graha, aṁśa, nyāsa, apanyāsa, mandra, tāra, alpatva,

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1. According to MS. No. 13031 of the Madras Oriental manuscripts Library, the text is

देशीरागाश्च सकलाः षड्जग्रामसमुद्भवाः ।
ग्रहांशन्यासमन्द्रादिषाडवौडवपूर्णताः ॥
देशीत्वात् सर्वरागेषु भवन्ति न भवन्ति च ।

In Mr. S. Narayanasami Aiyar's edition of the Svaramela-kalānidhi, nstead of पूर्णताः in the second line of the above quotation we find पूर्णकाः. पूर्णता can be admitted to be the better of the two expressions.

bahutva, ṣāḍava, and auḍava. He quotes Śārṅgadeva in support and adopts his definitions of ālapti and prabandha. In defining his rāgas he tries to give besides graha, aṁśa and nyāsa, the copiousness (bahutva) or otherwise of notes, etc. And in a separate chapter, by the use of the remarkable notation of his invention he has tried to illustrate the sañcāras of a number of rāgas. These definitions, since they give an idea of the gamakas also used, are superior to those of other writers in completeness and exhaustiveness. Most of the rāgas defined by him have for nyāsa sa; some have for nyāsa ga, ri, dha, etc., some have sa for all the three lakṣaṇas usually given. He says that in every rāga are found the graha which is found at the commencement of the song, the aṁśa which is copiously used and the nyāsa or the final. He considers that therefore these lakṣaṇas alone are enough to define the rāga. Compare with this the importance attached to every one of the 10 lakṣaṇas in a prior age. His treatment of vādis, etc., mūrchanā, tāna, varṇa, and alaṁkāras agrees in principle with that of Śārṅgadeva.

The same can be said of Puṇḍarīka Viṭṭhala's treatment of mūrchanā, tāna, varna, alaṁkāra, etc. The three lakṣaṇas graha, etc., are given for each rāga. He defines ālapti as adorned by varṇa, alaṁkāra, sthāyas and the variegated use of gamakas, etc. He says ālāpa is well-known as manifesting graha, nyāsa,mandra, apanyāsa, tāra auḍava, ṣāḍava, pūrṇa, madhya and aṁśa (10 lakṣaṇas). Rāgālapana is the clear exhibition of the forms of both of them (*viz.*, ālapti and ālāpa). It is of two kinds according to rāga and nibaddha. That which is independent of vastu is rāgālapti. This is explained according to the 'sages' (and agrees with Śārṅgadeva's account). Rāgālapti is endowed with the four svasthānakas. If the vidārīs are separated distinctly the ālāpa is called ṭhāya. Nibaddhakālapti is endowed with the tāla and rāga of the vastu. It is divided into pratigrahaṇikā and pra-

bhañjanikā (defined according to the Ratnākara). The rāga's saṁsthāpana or establishment is to be done by charming and very brilliant sthāyas, subtle and varied svaras, and pervasive with the power of the lifenotes or aṁśasvaras.

Govinda Dīkṣita marks an epoch. He takes us forward and gives a turn to the theory of the ālāpa which has profoundly influenced the foundation of the art and we feel his influence at the present day. He has given in the Saṅgīta Sudhā a masterly exposition of 'the limbs' of the rāga (rāgāṅgas), viz: ākṣiptikā, rāgāvardhanī, vidāri, sthāyī, vartanī and muktāyi. These limbs can be described as an elaboration and expansion of the ālapti of the Ratnākara in terms of the musical practice of his time. Dīkṣita has built on the theoretical structure of the old authors. He deals with tānas, alaṁkāras, varṇas, etc., all on the lines of the Ratnākara. This reveals that the system of the Ratnākara was not a dead-letter at this time because its principles were still active. In fact, Govinda Dīkṣita even goes to the extent of an exhaustive treatment of jātis and other rāgas pertaining to the 'grāma' group. He mentions the 13 characteristics of the rāga and deals elaborately with them.[1] In his definition of the rāgas he devotes great attention to the employment of these lakṣaṇas. For instance, the nyāsa, graha, and aṁśa notes, the vādi and saṁvādi, the derivation of the ṣāḍava by the mention of the lopya svara and similar details are clearly given in the definition of the lakṣaṇa of the rāgas dealt with by him. Besides these, the treatment of the 6 aṅgas

1. Govinda Dīkṣita says that the jātis defined by him and the rāgas derived from them possess the following 13 Lakṣaṇas:—Graha, aṁśa, tāra, mandra, nyāsa, apanyāsa, sanyāsa, vinyāsa, bahutva, alpatā, antaramārga, ṣāḍava and auḍava.

He defines ālāpa thus:—

ग्रहांशयोस्तारकमन्द्रयोश्च न्यासस्य चापन्यसनस्वरस्य ।
तथा स्वराल्पत्वबहुत्वयोश्च संपूर्णभावौडुवषाडवानाम् ॥
यत्रास्य सर्वं परिदृश्यतेऽभिव्यक्तिः स आलापपदाभिधेयः ।

of the rāga, which figure prominently even to-day, is remarkable. The use of dialectical names in describing the rāgas for example, yaḍupu, muktāyi, etc., is significant. His definitions of the sañcāra of rāgas are remarkable for their completeness and precision; he explains every detail in the singing of each rāga.

His exposition of the limbs of the rāgas is unique as already observed. According to him each rāga has 6 limbs. They are:—

(1) Ākṣiptikā.—In defining this he says that the rāga is first thrown up (*i.e.*, revealed) by this aṅga or limb and is hence called 'Ākṣiptikā'. He adds that this is proper. This aṅga is popularly known as āyitta.

(2) Rāgavardhanī.—The rāga which has become manifest in the ākṣiptikā is developed (literally increased). It is popularly called yaḍupu. Some call this by the name Karaṇa.

(3) Vidārī has the function of dividing 2 rāgavardhanīs. The 2 vidārīs are known by the names yaḍupu and muktāyi.

(4) Sthāyī.—This is the establishment of the tāna groups on the note which is first taken up.

(5) Vartanī.—The collection of the tānas of different notes abide in this. This is also called the makariṇī according to lakṣya.

(6) Muktāyi.—The rāga is brought to a close in this aṅga. This is well-known as Muktāyi.[1]

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1. आक्षिप्तिकादीनि निरूपयामो रागाङ्गभूतानि निरुक्तिपूर्वम् ।

आक्षिप्तिका—

आक्षिप्यते स्म प्रथमं हि रागैराक्षिप्तिका नाम तदस्य युक्तम् ।
सैवोदितायित्तपदेन लोकैराक्षिप्तिकेयं तदिहादिमाङ्गम् ॥

रागवर्धनी—

आक्षिप्तिकायां स्फुटतां गतस्य रागस्य वृद्धिः क्रियतेऽनयेति ॥
सा रागवर्धन्युदिता द्वितीयमङ्गं च लोका यदुपास्यमाहुः ॥
तद्रागवर्धन्यधुनाभिधानमङ्गं तु केचित् करणं वदन्ति ॥

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Govinda gives the definitions of 50 rāgas with reference to these aṅgas. He defends the use of the dialectical terms like Muktāyi, etc., since they are synonymous with the standard terms of theory. It is very instructive to follow his definition of rāgas, and to give an indication of his treatment, his description of Naṭṭa is explained here. The Ākṣiptikā for this rāga begins in tāra sa, descends to madhya ri, from there regularly ascends to tāra sa by the use of the desired number of tānas, and closes on tāra sa. The Rāgavardhanī begins on the madhya pa, ascends to tāra pa, comes down to ma, uses tānas, and ends on madhya sa. The vidārī goes up from the madhya ma to tāra ri, descends to madhya ri, and after the rendering of tānas ends on sa. This is otherwise called muktāyi, and resides within the Rāgavardhanī. The second Rāgavardhanī ascends to the tāra ma, goes up to the tāra ni, comes down to the madhya sa, and after the singing of various tānas ends on madhya sa. The vidārī of this rises from the madhya ma to tāra ga, comes down to madhya ri, and again using tānas ends on tāra sa. The ṣaḍja sthāyī begins on tāra sa, goes up to tāra ni, and after the singing of 10 tānas severally on ṣaḍja, ṛṣabha, madhyama, pañcama and niṣāda, by including every previous note and excluding every higher note, and by ārohaṇa and avarohaṇa, ends on tāra sa. The pañca-

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विदारी—

सा रागवर्धन्यभिधाङ्गयुग्मविभाजकोपाधिरसौ विदारी ।
यद्वप्युमुक्तायि गिरा विदार्यौ भाषानुरोधेन भणन्ति लोकाः ॥

स्थायी—आदौ गृहीतस्वर एव तानगणे स्थितिः स्थायिपदाभिधानम् ।
तच्छास्त्रलोकव्यवहाररीत्या लभेत रागस्य चतुर्थमङ्गम् ॥

वर्तनी—

नानास्वराणामिह तानवर्गो यद्वर्तते तेन तु वर्तनीयम् ।
इदैव लोके मकरिण्यभिख्यामाप्नोति लक्ष्मप्रवणप्रयोगे ॥

मुक्तायि— वन्यस्यते राग इदैव रागन्यासाह्वयं तेन तु षष्ठमङ्गम् ।
अस्यापि लक्ष्येह जनाः प्रयोगे मुक्तायिसंज्ञां मुदुराद्रियन्ते ॥ —संगीतसुधा.

masthāyī (beginning on madhya pa), madhyamasthāyī, ṛṣabhasthāyī, and madhyamaṣaḍjasthāyī (in all of which 12 groups of tānas are mentioned) are described according to similar principles. Each sthāyī begins and ends on the note after which it is named. The vartanī begins on the madhya sa, goes up to tāra ni, comes down from sa, and after the gradual singing of tānas ends on madhya sa. This is otherwise called makariṇī. The nyāsa starts on the tāra ri, descends to madhya ri, goes up to tāra sa, and using tānas gradually ends on tāra sa. So also in every other rāga we find all these limbs treated. More than one 'Sthāyī' is usually given; in many cases they are 3 in number, in some 4. For Mukhāri 5 sthāyīs are given.

In the light of existing data, this is the first book on the present system of Karnātic music to be written in Tanjore, which entered now into a new age of renaissance and flourished as one of the most important centres of Indian culture for some generations. In music as in other arts, Tanjore took the lead and close on the heels of this book followed Veṅkaṭamakhin's work, which further helped to decide the nature of Karnatic music as it exists to-day. Thus in respect of both the theory and practice of music, Tanjore henceforward exerted a predominant influence. In view of the kinship of the literature, Veṅkaṭamakhin and Tuḷajā will be discussed in succession and then other writers.

As regards vādī, etc., varṇa, alaṅkāra, mūrchanā, etc., Veṅkaṭamakhin accepts the principles already established. He admits 10 lakṣaṇas for rāgas, according to Mataṅga and others, *viz.*, graha, aṁśa, mandra, tāra, nyāsa, apanyāsa, sanyāsa, vinyāsa, bahutva, and alpatā. He defines all of them in accordance with the traditional definitions. It is interesting to note his definition of nyāsa, etc. Nyāsa is the final of the music, it brings the rāga to its final close. Apanyāsa marks the intermediate closes of the rāga. Sanyāsa is the final of the first division

of the song. Vinyāsa rests on the edge of the limbs of the rāga like the gīta-khaṇḍa or a section of music in a whole piece. He quotes Bharata as saying that in elaboration the sanyāsa and vinyāsa are inherent in the apanyāsa note. So they are not defined in giving the rāgalakṣaṇa; and the apanyāsa also is not defined, probably because the author intends it to be used in the light of lakṣya.

Veṅkaṭamakhin devotes one prakaraṇa for discussing ālāpa, which he popularises in the form expounded by his illustrious father. He says that the ākṣiptikā is always at the commencement of the ālāpas. It is otherwise called Āyittam. His explanation agrees with his father's that the ākṣiptikā casts up and manifests the rāga. After this the Rāgavardhanī is rendered, otherwise called yaḍupu. This rears the rāga which has emanated from the ākṣiptikā, and hence so-called. It is also known as karaṇa. Then the vidārī known as muktāyī is sung. Because it divides the first and second Rāgavardhanīs it is called the vidārī; it is to be understood in this sense in its subsequent applications. Then is to be sung the second Rāgavardhanī. It is popularly called the second yaḍupu. Its vidarī is the second vidārī. Then the third rāgavardhanī and the third vidārī are rendered; this may or may not be sung in some contexts. Then is sung the sthāyī. The sthāyī means that note on which the tāna is established. First the madhya-ṣaḍja-sthāyī, beginning on madhya sa and going up regularly to tāra sa, is sung. In the sampūrṇa rāga these form 8 notes, in the ṣāḍava 7, in the auḍava 6, and on each of these notes 2 tānas are to be sung. When a pair of tānas is sung on a note, the notes above it are not taken, but only the notes below it, down to the mandra in ascending and descending order. The vinyāsa or close should be on madhya sa. In avaroha or descent, the same rules hold. Two tānas are to be sung in tāra sa, and two in tāra ni; pa and ma are not to be touched; when pairs of tānas are being sung on ga, ri and

madhya sa separately, the lower notes are not to be touched. Accordingly in ascent too the lower notes are not to be taken. In āroha the foregoing notes are not to be included; in āroha and avaroha two tānas are to be sung to each note. In the first tāna their exit should not be made, but only the touching of the note. In the note of the second sthāna, a momentary pause should be made and then the tāna is to be finished. These are the rules for the madhya-ṣaḍja-sthāyī. In the same manner those notes among the svaras from madhya ni to mandra sa which are acceptable should be made sthāyīs; then by way of ascent 8 notes with reference to each of the sthāyī notes are to be taken, and their foregoing notes are to be touched. Similarly in the mandra notes, 4 tānas each in ascent and descent should be rendered and the nyāsa made on the sthāyī notes. This is said by Veṅkaṭamakhin to be the traditional practice. After finishing the sthāyīs they are to be supplemented by the vardhanī. This is popularly known as 'makariṇī'. This commences on the mandra sa and the nyāsa also is in the same note. Then the fourth Rāgavardhanī and its accompanying vidārī are to be sung. This is the ālāpalakṣaṇa common to all rāgas. Veṅkaṭamakhin adds that this definition of ālāpa was made by him in the 50 rāga-ālāpas given or rendered by Tānappa. It may be added that though the details of this elaborate rāga-ālāpa-lakṣaṇa is not widely known among the practical exponents of the art, the influence of tradition and practice has been strong enough to preserve on the whole the main features of the above defined lakṣaṇa.

Veṅkaṭamakhin supplements his definition of ālāpa in the ṭhāyaprakaraṇa of his work. According to him, in ṭhāyas any note of a rāga can be chosen as the sthāyī as is suited to the rāga, and four tānas are to be sung in āroha on four notes ahead of the sthāyī, according to the requirement of the rāga. Similarly four tānas are to be sung in avaroha. The nyāsa is to be on mandraṣaḍja; the yaḍupu

of the ṭhāya or makariṇī and muktāyikā are mentioned. After giving this lakṣaṇa common to all ṭhāyas, Veṅkaṭamakhin alludes to the ṭhāyas composed by Tānnappācāryaśekhara described as 'परमो गुरुरस्माकम्' for all rāgas in accordance with this definition.

The most important treatise written in Tanjore after Veṅkaṭamakhin was the Saṅgīta Sārāmṛta by Tuḷajā Mahārāja. He follows Veṅkaṭamakhin in every respect. He defines the 10 lakṣaṇas of rāgas in the same manner as Veṅkaṭamakhin. His verses on the nyāsa, apanyāsa, etc., are identical with those of the Caturdaṇḍīprakāśikā. He can be said to have propagated and popularised the system of Govinda Dīkṣita and Veṅkaṭamakhin. He gives the sañcāra of each rāga in elaborate detail, and the description affords very interesting and instructive reading. His method is as follows. He gives the graha, aṁśa, and nyāsa (which are sa in many rāgas); he says whether the rāga is sampūrṇa, ṣāḍava or auḍava, whether it is vakra or otherwise, and whether it is upāṅga, rāgāṅga, etc. He supports his definition by quoting prayogas from ṭhāya, gīta, sūḷadi, the udgraha and muktāyī, (of compositions), etc. He quotes the names of the sthāyīs used in ṭhāya. He mentions, in some cases, the exclusion of ṣāḍava and auḍava tānas, also the laṅghana of a note wherever it occurs, and the groupings of notes which are copiously used and characteristic. His name for sañcāri is svaragati. He explains the meḷa from which each rāga is derived. He is most thorough in his method of explaining rāgālāpa. It can be said without exaggeration that Govinda Dīkṣita, Veṅkaṭamakhin and Tuḷajā can be regarded as the three pillars which support the structure of modern Karnātic music in its theoretical and practical aspects.

Govinda, the author of the Saṁgīta Śāstra Saṁkṣepa which explains the rāgas current at present with surprising faithfulness, can be assigned to the first half of the 19th

century, because his information shows no trace of the influence of the Trinity mentioned above, at least as regards the details in the nomenclature of rāgas and it is reasonable to believe that he attempted to embody in his work the names and lakṣāṇas of rāgas which had somehow lost their connection with the rules laid down by the school of Veṅkaṭamakhin, but which had become widely accepted and popular. The argument that Govinda's system was older than Veṅkaṭamakhin's does not seem to be right, because Govinda Dīkṣita, Veṅkaṭamakhin and Tuḷajā were not expressing in their works their private views but they tried to describe the art as it prevailed in the courts that they adorned. They can without contradiction be taken as authorities representing the art of their times. When they set themselves to the task of writing a text-book it was with a view to treat the system as a whole and as a reality, and hence they would not have omitted to refer to Govinda's system if it was a rival school. Govinda in fact takes notice of other views than his. So there is clear historical evidence to show that Govinda must have written his book sometime in the beginning of the 19th century, and he remains an authority at present who cannot be ignored because the views advanced in his book have influenced the practice of Karnātic music for nearly a century and more and still retain their influence. Govinda is to be understood as accepting the 10 lakṣaṇas of the rāga, and for his rāgas he mentions, only the graha, aṁśa and nyāsa (which as usual are represented in most cases by sa), both in the defining ślokas and gītas.

Some other authorities may now be discussed. In the fragmentary rescension of the Nāṭyacūḍāmaṇi by Somanārya, a writer later than Somanātha in date, the graha, mūrchanā, āroha, avaroha, sañcāra in the 3 octaves, āyuta, pratyāyuta, eḍupu, ḍalu, ṭhāya, udgraha, muktāyi, and kampita are all mentioned in this confused order in

connection with rāgālāpa. The author says that the singer should know vādī, saṁvādī, etc. He defines mūrchanā, alaṅkāras, etc., and also sthāya. The text is not accurate throughout and the interpretation follows it. Kriyā is the ascent and descent of 7 svaras. As the tāra śrutis are sharp they should be omitted. The commencing mandra svaras are sthāya. The singing of 2 notes in the tāra is svara. Āhata, āyata, pratyāhata and anāhata are not clearly defined. Kampita is said to mean the quick sañcāra of notes in 3 registers. Eḍupu is at the sthāna where the notes are prolonged. The sweet pervasiveness of notes is mukta. The 10 excellences of song given in the Nāradaśikṣā are mentioned and attributed to Śārṅgadeva.

Ahobala deals with mūrchanās (which he classifies as of 7 notes, ṣāḍava and auḍava), varṇas and alaṅkāras and the 5 gītis. He defines 'rāga' as a pleasing combination of notes. In the definition of rāgas he mentions graha, aṁśa, and nyāsa, the lopya notes, the particular kinds of gamakas and mūrchanās used, and the śrutis of the notes used.

Basavappa in his Śivatattvaratnākara gives an account of alaṅkāras. He defines the rāga as the peculiar structure of tones, adorned by svaras and varṇas, and delightful to the hearers. He mentions the jātis. In describing the lakṣaṇa of rāgas, he gives their graha, aṁśa, nyāsa, mūrchanā, the notes omitted and accidentals which are included.

In the Saṅgīta Saraṇi the anibaddha form of music is called ālapti which is in its form ālāpana. Ālāpana reveals the rāga without tāla, through huṁkāra and tena, etc. The author quotes Harināyaka as saying that ālapti is sung by one who knows gamakas and the octaves, etc., with varṇas and alaṅkāras and is given variegated treatment. Ālapti is of 2 kinds according to rāga and rūpaka. Nibaddha is sung to Dhātus and aṅgas. It is of 3 kinds,

viz., śuddha, chāyālaga and kṣudra. The first consists of ālāpa, dhātu and aṅgas; this is called prabandha. Because the śuddha is nibaddha, what distinguishes it is ālāpa. By the ālāpa is meant the presentation of the whole (rāgā) with tāla and words with meaning. According to the author the vādī note is copiously used, and makes the rāga prominent; 'it determines that a certain rāga is such and such'.[1] 'The saṁvādī is equal to the pañcama or the madhyama of the vādī. G and N are vivādīs of R and D. The remaining notes are anuvādīs. Notes are of 3 kinds according as they are graha, aṁśa, or nyāsa. Again they are of 3 kinds according as they are graha, aṁśa or anaṁśa. Graha is at the beginning of the song. Aṁśa and nyāsa are defined as usual. Mūrchanā is defined as emanating from the grāma, and it is called 'mūrchanā' wherein the effective application of the note establishes the rāga.[2] The mūrchanās of all the 3 grāmas are given. Tānas develop the mūrchanās. Thus everything is said to be contained in the mūrchanās. The rāgas are said to delight the mind in the 3 worlds.

The Saṅgīta Kaumudī which belongs to this group repeats that the 'anibaddha gīta is the same as the ālāpas'. In the Kavi Cintāmaṇi it is repeated that in a mūrchanā, svaras by being intensified ('mūrchita', *i.e.*, applied effectively) enter into the state of a rāga.[3] Tānas are said to be the same as mūrchanās distinguished by being śuddha and applied in ascent. The definition of the Saṅgīta Saraṇi that a rāga is that which delights the minds of the dwellers in the three worlds is repeated. In the Saṅgīta Nārāyaṇa, which is one of the most important books of

1. वादी स गीयते प्रचुरो यः प्रयोगेषु वक्ति रागादिनिश्चयः ।
बहुधा प्रयुक्तोऽमुकरागोऽयमिति निश्चयं करोति । —संगीतसरणिः

2. स्वरः संमूर्छितो यत्र रागतां प्रतिपद्यते ।
मूर्छनामिति तामाहुः कवयो ग्रामसंभवाम् ॥ —संगीतसरणिः

3. यत्र स्वरो मूर्छित एव रागतां प्राप्तः तामाह मुनिश्च मूर्छनां
—कविचिन्तामणिः

this group, the definitions of the vādī, etc., mūrchanās, tānas, graha, aṁśa and nyāsa are repeated. The definition of the rāga given above is attributed to Bharata and others. The graha, aṁśa, nyāsa, mandra, etc., for rāgas are given.

Taking the group of North Indian writers (circ. 17th. century), we find that Locana mentions nibaddha and anibaddha (and calls the former ālāpa; the text is not clear here). Śrīnivāsa Paṇḍita mentions the mūrchanās for rāgas, also varjya notes, udgraha, sthāyi, sañcari, aṁśa and nyāsa, etc., for his rāgas. Hṛdayanārāyaṇa in his Hṛdayaprakāśa says that nyāsa brings to rest the rāga or tāna, and is a pleasing note. Tānas are pleasing notes which are 2, 3 or 4 in number. Five or more notes make a rāga. When nyāsa and aṁśa are not defined, ṣaḍja stands for them. The charming effect of notes in ascent and descent is called mūrchanā.[1] Among modern writers Kāśināṭha defines saṁvādīs and vādīs in their accepted sense. Vivādī is varjya, to be omitted, and spoils the beauty of the rāga. In some rāgas, the vivādīs are also touched slightly, and this the author says is not objectionable from the Deśī point of view. According to him the ālāpa is the manifestation of graha, aṁśa, mandra, tāra, nyāsa, apanyāsa, alpatva, bahutva, ṣāḍava, and auḍava. It is of 2 kinds, *viz.*, rāga and rūpaka. In these respects Viṣṇuśarma agrees with him.

Modern theorists of South India base their treatment essentially on the system propounded by the Trinity headed by Govinda Dīkṣita. Mr. K. V. Srinivasa Aiyangar in his Gāna Bhāskara deals with the subject exhaustively. According to him some works define ālapti to be a brief treatment of the rāga, and ālāpa as elaborate treatment. He mentions Veṅkaṭamakhin's ākṣiptikā, the four Rāgavardhanīs and vidārīs. In all this he follows the method

1. रक्तारोहावरोहश्च स्वराणां मूर्छना स्मृता —हृदयप्रकाशः

of Veṅkaṭamakhin. In addition he gives the duration of of the first Rāgavardhanī as 20 minutes, of the second Rāgavardhanī as 10 minutes, of the third Rāgavardhanī as 5 minutes, of the fourth as 2½ minutes. The idea, a contribution by the author, is obviously that the time allowed for each of the items should be gradually diminished, and the treatment intensified in proportion. The author also mentions that there is another method called sthāyī-sañcāra. This is of 2 kinds, *viz.*, āroha̱ṇa sthāyī and avaroha̱ṇa sthāyī. The former proceeds from madhya sa to mandra sa and back to madhya ri. Thus every one of the 7 notes of the madhyasthāyī should be made a 'sthāyī' note and sañcāra based on it similarly. If similar development is rendered in avaroha̱ṇa order, it is called avaroha sañcārī. We saw that the principles of these sthāyīs were discussed by Govinda Dīkṣita. The author adds that Bharata propounded a kind of makariṇī called ālāpa, which, according to him, is akin to a variety of the second and third Rāgavardhanī.

The views of some prominent Western writers may be noticed here. Captain Day says that 'rāga' is best explained as a 'melody-type' since it is a melodic extension of certain notes of a particular scale or mode (thāṭ) according to certain fixed rules called the mūrchanā. His definition of the mūrchanā of the rāga as the style and the time of the rāga giving the relative values of the different notes, the accentuation and any peculiarity of expression or tempo is not quite according to the text. His definition of the ālāpa and madhyamakāla, is very elaborate, and true to practice.

The term "mūrchanā" has now been extended in connotation by popular usage and is taken as representing the entire "personality of the rāga". This is explained by Mr. Popley thus:—"All the characteristics of the rāga are embodied in its mūrchanā or 'thāṭ' which are the names now given in the South and North respectively to

the rāga basis expressed in the notes. The aṁśa and also the peculiar sequences and grace notes of the rāga are shown in this, which includes both ascent and descent. It includes all the essential facts about the Rāga". It will be seen that this modern acceptance of the significance of term is not contrary to that of its definition by Mataṅga and especially by Kohaḷa. It will be remembered that in the 'grāma' music by 'mūrchanā' was understood a grouping of notes employed to bring out an aspect of a 'melody-type', but it was not taken as expressing all the features of the rāga as now.

What does the term 'Rāga' connote? The personality of sound created by the progression of musical notes according to some accepted laws of melody is known by the name 'rāga'. These laws which govern the progression of svaras are the product of a long process of evolution, and they form together the technique of the ālāpa. The rules of ālāpa have varied from era to era in one or more aspects of their application, but their aim has always been to establish the individuality of each rāga and keep it distinct from that of other rāgas. Mataṅga's description of the 'rāga', quoted by Kallinātha is as follows:—

योऽसौ ध्वनिविशेषस्तु स्वरवर्णविभूषितः ।
रञ्जको जनचित्तानां स रागः कथितो बुधैः ॥

This definition is acceptable even now. According to current theory, the rāga usually consists of five, six, seven or more notes of the octave, with or without accidentals, in either the ascending or descending order or both, in regular or irregular sequence ranging from the keynote to its octave. The order of this sequence is a most essential feature, subject to which the svaras of the rāga are strung together in innumerable combinations. These combinations must always be such as to bring out the melodic idea which constitutes the rāga: this is

achieved by the repeated emphasis on one or more notes, or one or more phrases which always keeps the spirit of the rāga before the mind's eye. Exceptional sañcāra, the demarcation of octave-limits and other features are determined by their power to preserve and develop the individuality of the rāga. The notes of the rāga cohere in the interpretation of its personality by means of the device known as the gamaka. The gamaka assumes an infinite variety of form in its function of expressing the various śrutis revealed by each note as it occurs in the scheme of the melody of the rāga.

A general estimate of the development of the technique of the rāga may be made here. In the Ratnākara we find it developed in a very advanced form as is demonstrated by the use of varṇas, alaṅkāras, mūrchanās and a complex variety of gamakas and the variations of tempo. In the alaṅkāras used, we find an abrupt mixture of mandra and tāra sthāyīs. This is suited for instrumental music, and would be easy for vocal music if it is in slow speed. The alaṅkāras offer a rich variety of svara-combinations. Some of them are striking in their possibilities of depicting various rasas. Some of them are appropriately named after their motion, *e.g.*, ūrmi or wave has a wavelike movement. Mūrchanās and tānas supplied the warp of the music in the shape of innumerable patterns of svara groupings. The emphasis laid on the vādī-saṁvādī relationship is noteworthy. The fixing of the tāra and mandra limits is again notable in contrast with modern practice, which takes more freedom in range, though in some exceptional cases like Punnāgavarālī, Kuranjī, etc., the limits are final. The other lakṣaṇas were also important in the singing of the rāga. But these gradually came to be regarded as subordinate, and only the graha, aṁśa and nyāsa are mentioned from the time of Rāmāmātya. The point that all these are 'sa' in many cases probably indicates that their significance had rather

waned. At the present day the nyāsa is in almost all cases the ṣaḍja, and the aṁśa is not defined by artists as one note. There are musicians who assign more than one aṁśa to some rāgas. But this seems to point to the significance assumed by what are called 'mūrchanās' which consist of prayogas which stand in the same relationship to the rāga as 'aṁśa'. Now whole phrases take the role of the single note occurring as aṁśa, though often it is found that one note helps to bring out the features of the rāga more emphatically than any other. Though instrumental music has been responsible in bringing about changes in the practical lakṣaṇas, vocal music has been also actively influencing the 'Rāga'. Down to Veṅkaṭamakhin's days we find free use made of the three octaves in gītas and songs, which is only possible of production now-a-days on instruments; but now the range of music is confined, in compositions and the singing of rāgas, to two and a half octaves at the most, *i.e.*, the mandra, the madhya, and the tāra octaves, the last up to the pañçama. On instruments the tāra octave is also freely used. The inclusion of foreign scales, many of which resort to accidental notes, had been going on throughout the course of the history of Karnātic music. The tendency of masters like Tyāgarāja has been to appropriate Deśī melodies and even Western airs to the system of Karnātic music if they felt that this would enrich the art., *e.g.*, Tyāgarāja's songs in Hamīr Kalyāṇī and Yaman Kalyāṇī, Pratāpavarāḷi, Supoṣaṇi, etc., and Dīkṣitar's songs in Hindoḷa and Hamīr Kalyāṇī, etc. To-day the magnificent structure of Karnātic music rests upon a foundation which is built on an elaborate system of principles evolved during centuries of the development of melodic music. And the Rāga system of South India has a place among the noblest contributions ever made by human genius to the world's culture.

CHAPTER V.

Gamakas and the Embellishment of Song.

The idea of grace is inherent in all music. Grace or gamaka, through the refinement of sound, adorns song. It makes all the difference between a plain and a pleasant note, and by endowing a note with beauty makes it eloquent in music. Melodic music, consisting of a succession of notes as it does, has to make its appeal through the ornamentation of these single notes, and therefore has to subsist almost entirely on the use of grace. Even harmonic music employs grace wherever necessary. Gamaka has been defined by Śārṅgadeva and others as the ornamentation of a note by shaking it. But evidence from their works can be cited to show that the idea of gamaka is more extensive than the connotation of this definition; it has been used to convey the idea of beautifying a note not only by the shake but by any other means which seem to be efficient or adequate. For instance by the adjustment and control of the volume of a single note it can be made to assume different shades of colour, and these effects can be, and have been legitimately classed under the category of gamakas. This has a bearing on some methods of classification which have recently been propounded such as that mentioned by Mr. Fox-Strangways in "The Music of Hindoostan". He says that for practical purposes gamakas on stringed instruments can be classed under two categories, *viz.*, the glide and the deflect. But, besides this being confined to instrumental music, this classification does not take into account, the grace effects which can be got out of a note, though the manipulation on the instrument is stationary and confined to the note, *i.e.*, a gentle prolonged tremor in the svara, which cannot strictly be

classed under either the slide or the deflect. The classification of gamakas is much more complex in vocal music. This complpexity in the nature of gamakas, as used in vocal and instrumental music, has been noticed and exhaustively treated in Sanskrit treatises on music. They offer an abundance of material on this subject as well as on others.

The employment of gamaka is as old as the Vedas. It was a dominant feature of the Sāmaveda; but in the other two Vedas, the Svarita ('sounded') was used, and it can reasonably be said to have fulfilled the function of gamaka in the secular music of later times. Mr. Fox-Strangways is inclined to believe that the Sanskrit language might have been a contributory cause in the evolution of gamakas, and traces the development of the deflect to the treatment of vowels when they coalesce in Sanskrit and that of the slide to the similar treatment of consonants. But it seems far-fetched to base the evolution of gamakas on the grammatical structure of the Sanskrit language. It should rather be related with the peculiarities of intonation in song and the requirements of melodic music. In the Sāmaveda, we find many musical phrases used which have a surprising similarity to some well-known varieties of modern gamakas. In the music of the Sāmaveda we find lay music being pressed into the service of religion without losing some of its distinct characteristics in the process. Disjunct motion is employed often, and in it, we can recognise the "Zārus" of the present day. Pratyutkrama, where a note moves forward to a higher note, with its eight varieties (*viz.*, from the 6th note to the 5th, 5th to 4th, 4th to 3rd, 3rd to 2nd, 2nd to 1st, 5th to 3rd, 5th to 2nd, 3rd to 1st); Kaṛṣaṇa, which is movement down the scale, occasionally applied to the fifth note meaning that it is drawn beyond the mandra with its five varieties (up to the 2nd, 3rd, 4th or 5th tone, the last being drawn from the 4th or 6th tone), Ṇamana, Praṇata,

Vinata, Vyutkrama, Samprasāraṇa, Abhigīta, Udghāta, Nighāta, Vṛddhi, etc., show how many different devices partaking the nature of one or the other of the Gamakas which are well-known to us were used in the chant of the Sāmaveda. We find the Udghāta (the raising of a tone) and Nighāta (the sinking of a tone) which were employed in different kinds of transilient motion and Vṛddhi (the stress on a note) are quite frequently resorted to, in musical practice in our own day. Apart from evidence of this kind in the chant of the Sāmaveda, we find in the various śikṣās, which deal with the laws governing the chanting of the Vedas, much material which has a close correspondence with the gamakas dealt with by Śārṅgadeva and others under the heading "Sthāyavāgas". For instance, Kṛṣṇavāmi Śrautin, in his famous edition of the Sāmaveda, quotes the "Śikṣā" as saying, that in the morning the Veda is to be chanted with the notes of the chest, in the manner of the growling of a tiger, in the noon with the notes of the throat similar to the notes of the bird Cakra, in the third service, with the notes of the head, *i.e.*, the tāra register. This register, whose tones resemble the notes of the peacock, the swan and the cuckoo, is to be used always. These directions evidently have a strong resemblance to the Sthāyavāgas, which were evolved later. The śikṣās give numerous references of this kind. The Yājñavalkya Śikṣā lays down rules regarding the nature of the tones to be produced while chanting various words of the Vedas. We note only the tone effects without reference to the context of the words in the following instances. The sound of the notes is to be like the roaring of a lion, or the thunderclap or the noise of the dundubhi heard from a deep lake. It is to be like the noise of a cloud in a gorge during the month Bhādrapada. Some words have to be pronounced in the manner of monkeys jumping from branch to branch in a tree. Some other words should be like the kissing of a child by its mother; others should resemble the blooming of plants on a

mountain's sides, some words should be pronounced like the panting of those that carry heavy loads or like the notes of an amorous cock or mare or woman. Others should resemble the still flight of kites which draw in their wings dazed in mid-air, or the carrying by a tigress of her cubs in her mouth without hurting them, or the gait of an intoxicated elephant. Words should be intoned in a sweet, clear, and distinct manner without being tortured and should be coloured as the japā flower which resembles the red ruby. In the Nārada Śikṣā 10 excellences of lay and religious music are defined which have a stronger resemblance to sthāyavāgas than the previous references from other Śikṣās. According to the Nārada Śikṣā, Rakta means the oneness of the notes of the flute and the Vīṇā; this indicates according to the commentary, the sweetness got by the agreement of the music of the two instruments and of the singer. Pūrṇa is the result of the fullness of Svaras and Śrutis. Alaṅkṛta transfers what belongs to the throat to the chest and the head, *i.e.*, adorns by change of register. Prasanna indicates clarity of music. Vyakta is akin to this. Vikṛṣṭa is the increase in the volume of the tone. Ślakṣṇa indicates the observance of the rules of viḷamba, pluta, high, low, etc. Sama is akin to this. Sukumāra consists of the soft pronunciation of words, and the squeezing out of indistinct words. These good qualities of singing later multiply themselves into scores of vāgas in musical treatises of a subsequent period.

Though the employment of gamaka in music is plain enough it is a long time before we come across the term gamaka in Saṅgīta literature. Bharata does not use the word gamaka in his Nāṭya Śāstra. He defines Pāṭhyaguṇas (the good qualities of dramatical speech) as consisting of 7 notes, 3 Sthānas, 4 Varṇas, 2 Kākus and 6 Alaṅkāras. Of these kāku is a singnificant term and occurs under gamakas in later literature. Bharata says that out of the

three registers in the voice and the vīṇā, issues forth the svara or kāku. This is of 2 kinds, Sākāṅkṣa and Nirākāṅkṣa; Bharata gives the octaves in which these occur. Alaṅkāra is of 6 kinds, *viz.*, (1) Ucca, this is a note of the head in the Tāra Sthāyī, used in instruments, for accosting one at a distance, for representing wonder, etc. (2) Dīpti is in the region of the head, and is Tāratara. (3) Mandra is in the chest (4) Nīca belongs to the chest and is Mandratara (5) Hṛṣva is svarita in the throat (6) Viḷambita is a Mandra note in the throat. The various emotions that these express are also given. Bharata also mentions the Kāku which is Ucca and Dīpta and when the kāku which is Mandra and other similar kākus are to be used in a drama. For instance, he says that Viḷambita Kāku is to be used to depict humour, love, and pathos. These kākus have characteristics in common with Sthāya-vāgas; it is noteworthy that the moods they express are enumerated in detail.

Bharata enumerates the four varṇas and the alaṅ-kāras which belong to them. These alaṅkāras have a special importance besides their value as beautiful group-ings of notes. It lies in their power to adorn notes or groupings of notes, just as these are adorned in gamakas or sthāyavāgas. There are many alaṅkāras which would naturally fit into the scheme of sthāyavāgas without disturbing their character, and it seems that they fulfilled the function of these gamaka varieties in an age when these had not been elaborated as a separate category. A study of alaṅkāras is very interesting from this point of view, and only a few examples are noticed here, just to bring out their similarity to sthāyavāgas. "Preṅkholita" moves forward and returns. 'Mandra' is elaboration in the Mandra register. The Alaṅkāra produced by the obstruction of the air in the throat is called 'Kuhara', and so on. In the Saṅgīta literature of the age of Bharata great importance is attached to the topic of alaṅkāras,

which obviously played the part of gamakas in music. In the Vāyupurāṇa several alaṅkāras are mentioned. Dattila treats varṇas and alaṅkāras in his work. It is interesting to find him defining the 'Bindu' as an alaṅkāra which stays long on a note, then leaps up to a tāra note like a flame and returns. According to him, when the notes of the chest, throat and the head are shaken by three śrutis, they are known as Kampita, Hārita and Recita respectively.

Among authors who came after Bharata, Nārada in his Saṅgīta Makaranda and Mataṅga in his Bṛhaddeśī mention gamakas though they do not enumerate any list of them or seek to define them. Along with the idea of gamaka, the expression 'gamaka' was perhaps being slowly evolved. Nārada in dealing with alaṅkāras says that he will describe 19 gamakas but their definitions are missing in the existing recension of his treatise. Mataṅga freely uses the term gamakas in the definition of rāgas and gītis. As in so many other respects, he is the writer who gives the most important information on this subject between the time of Bharata and Śārṅgadeva. According to him Rāgagīti consists of beautiful groupings of svaras adorned by gamakas which are lovely and graceful, of variegated colour, pure and bright, produced from the breast, and even. Here probably he is referring to the various kinds of gamakas that he knew. His description of Sādhāraṇa gīta is even more interesting. It consists of smooth and subtle combinations of Kākus and Svaras well connected. Again Bhāṣāgīti consists of delicate combinations, coloured by Kākus, endowed with Māḷavī Kāku which are shaken, tender and splendrous, and rich with beautiful passages. Vibhāṣā gīti, according to him, should make ample use of different gamakas which are pleasing to hear, smooth, illumined, shaken, produced in the breast, even, soft, emanating in the tāra and atitāra registers, and in the Madhya lit by the Madhyama. All these go to show that at the time when Mataṅga was writing the function and

significance of gamakas and kākus had become well understood, and these came to be freely used in music.

Nānyadeva, among the commentators of Bharata's Nāṭya Śāstra, mentions gamakas by the following names:—Sphurita, Kampita, Līna, Tiripa, Āndolita, Āhata and Tribhinna.[1] The manuscript of the commentary being very faulty, a free rendering of his definitions is given here. Sphurita illumines every note. The Kampita shakes the note in all the three octaves. Līna indicates the relinquishing of a note and the joining of it to another. Tiripa is very quick in tempo and is applied to Saṁvādi notes. Āndolita means the swinging of a steady note. Āhata beats all notes quickly again and again. Tribhinna, is difficult to render, is in quick time, the notes being illumined from the Mandra to the tāra octave, and in that register is loudly sung. The most striking features of Nānyadeva's account of gamakas is that he gives their total number as seven, and that he has defined as well as enumerated them.

Abhinavagupta's commentary is incomplete, and we do not come across references to gamakas, but his remarks concerning alamkāras in this connection are valuable. According to him an alaṅkāra makes one varṇa blaze forth, another passes through it like a thread, a third makes it blossom and a fourth dyes it in rich hues. Of course the great Ālaṅkārika, by these references, appraises their value as Vāgas.

According to Pārśvadeva, when a note produces the colour of śrutis other than those which are its own, it is known as a gamaka.[2] He gives the number of gamakas as seven. Sphurita is equal to an anudruta in speed, and

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1. गमकानामतो वक्ष्ये नाम लक्षणसंयुतम् ।
स्फुरितं कम्पितं लीनं तिरिपाट्टलितं (तिरिपान्दोलितम् ?) तथा ॥
आहतं च त्रिभिन्नं च गमकग्राम (?) सप्तधा । —नान्यदेवः

2. स्वश्रुतिस्थानसंभूतां छायां श्रुत्यन्तरागवान् ।
स्वरो यद्गमनेतीतो गमकोऽसौ निरुक्तिः ॥ —पार्श्वदेवः

in it the śrutis shine in the ascending order. Kampita is the shaking of the notes, in a speed double that of a druta. When a note softly merges into another note, in druta speed, it is called Līna. Where the Śrutis whirl in the form of an eddy, it is called Tiripa. Āhata proceeds in ascending order, beating the note that goes before it. When notes are swung in laghu speed it is called the Āndolita. Tribhinna touches all the 3 octaves without pausing and assumes the characteristics of all these octaves. He says that gamakas are useful in bringing out the characteristic features of a rāga.[1]

In the second adhikaraṇa of his book, Pārśvadeva gives many lakṣaṇas which were found in the practice of his time and which were defined by Bhoja, Someśvara, etc., in the Bhāṇḍīka bhāṣā. He treats sthāyas very exhaustively. Sthāya is according to him the state of notes when they are blended together with gamakas or any foreign rāga.[2] He gives an important list of sthāyas, many of which become specially important because they bear vernacular names. Some of them are left without any definition. Vena is a sthāya where rāga-elaboration is done by strange notes. Gati is a collection of notes which is sweet in music and seems to exist only by Śrutis. Jāyi is established in the place of a similar note. Anujāyi exceeds the established order by a note. Oyāra almost always is used in ascending order. Vali, like a group of waves raised by the wind, is a group of śrutis emanating from a good voice. Vahaṇi consists of the shaking of śrutis in the octaves like Mandra, etc., and belongs to the chest, throat and the head. Vahaṇi is of 2 kinds:—Avilapti and Śīta Śīta. It is again of 2 kinds Khuttā, in which the notes seem to enter in and shine, and Utphullā in which notes shine by going up. The Valī is

1. रागव्यक्त्यनुकूला हि गमका रागेऽपि संचारिणः । —पार्श्वदेवः
2. गत्वा गमकयोगेन रागेणान्येन केन वा ।
स्वैर्वृत्तिः स्वरवृत्तिर्वा इत्यभिधीयते ॥ —पार्श्वदेवः

also to be similarly understood. In Ḍāla (or Ḍhāla) the śruti moves quickly like a round pearl on a ground of crystal. In Prasara (or pasara) the note is sweetly and softly extended to another note. In lalita-gāḍha the note softly reaches the tāra sthāna. Proccagāḍha proceeds gradually from a thick to a soft note. In Apakhalla the note moves in the mandra octave very sweetly. Nissāraḍa goes very smoothly to the highest reach of the tāra octave and falls down to the mandra. Laṅghita leaps over another note and partakes the nature of āhata a little. Svaralaṅghita is the same, but leaps over an interval of 2 or 3 notes. Durvāsa is difficult to produce and consists of the joining of tāra and mandra. In Peṭṭhi (paṭho, peṭṭho) a phrase which has been already used makes its appearance again. Phellī (phellā-lo) proceeds in ascending order, and in it a note pushes against its neighbour with force. In Moḍāmoḍī the notes are lifted and divided up in descending order. Gumphāgumphi is made up like a garland with seven different prayogas used continuously and together. In practice this is known as Gunthāgunthi. In Khacara the note proceeds into the tāra register with force. When a ṭhāya is mixed charmingly with gamakas it is known as Gāṇāceṭhāya. In Tarahara the ṭhāya consists of notes which are shaken by a quick āhati or beat. In Tattavaṇa a very delicate ālapti is superimposed on the gīta in the ṭhāya. In Savidārī the ālapti which is prominent by its rhythm, consists of separated notes and is without support. In Bhramaralīlaka the note is very sweet and goes from the tāra to the mandra octave and again upward. Kālasaceṭhāya remains in the rāga already begun and is sweet. Cittā ceṭhāya signifies the rendering of the ṭhāya in a penetrating manner according to the state of the listener's mind. When the ṭhāya is endowed with Karuṇā Kāku, pathos and the qualities of rāga, or when it is contrary to the mind of the listener it is known as Karuṇā ṭhāya. In Gītāceṭhāya, the ṭhāya is rendered by ālapti. Joḍiyaceṭhāya

redoubles again the excellence of a prayoga and is difficult to render. Śārīrāceṭhāya produces a brilliance in the voice sportively. When the notes reaching the tārasthāna end with sweet sound it is known as Sādāceṭhāya. (In all these definitions the word ṭhāya seems to be used as a corrupt form of "Sthāya"). Kartarī means the loud and rapid sounding of the wire with four fingers of each hand separately. In Ardhakartarī the right hand looks like scissors and the left hand renders Koṇahati. In Nakhakartarī the wire is struck by four fingers of the right hand. Kuruḷeya indicates the śrutis generated in the very quick and sweetplaying of Labuthakkuli. When the muddayam of the flute (known in lakṣya as Muṭṭeyam), is produced vocally it is known as Mukuḷitam. These consist of a plethora of gamakas which are difficult to render. What in musical terminology is known as tāra and mandra is popularly known as Uccanīca. When a note commencing with sphurita touches the tārasthāyī it is known as Nirukhāyi. When the Sthāna or octave is made clear it is lekakhāyikā. Nirata signifies the use in ālapti which is crooked and which is rendered by the control of breath. Nigīti forcibly re-establishes a developed ṭhāya by a copious use of tānas. Vattuḍa consists of prayogas in the Mandra sthāyī (the definition in the original is not clear). The same is called Parivaḍi when it reaches its end without a gap. Evasam (called Esruta in lakṣya) proceeds refreshingly. The ṭhāya without baisiki is known as Uṭṭuṇḍulam. Very rapid movement in music is known as Bahilā. Adhikam captivates the listener by proceeding sportively and leisurely. Murakhuḍa (in lakṣya "Aṁmukha") is a ṭhāya in which the music does not have its full complement of notes. When a rare oḍḍavaṇā occurs in a rūpaka ālapti it is called Napāyi. Bharaṇam consists of the fulfilment of the rāga in rūpaka or ālapti; its contrary is known as Haraṇam. Sanagitā (dā?) indicates sweetness in music and nikaraḍā its opposite. Bhajavaṇam means

the manifestation of the rāga with a good voice. Nijavaṇam indicates the movement which is not hampered by breath. The rendering of Komala Svaras (or delicate notes) is called subhāva. Holāva pleases the mind by swinging the rāga. When the charm of a rāga and all its colour partakes the nature of Deśī, it is called Rīti. The mixed colour resulting from the fusion of rāgas is known as Anukaraṇa. Dharaṇi is rich with the wealth of foreign śrutis from the tāra octave (the definition in the original is not clear). The catching and releasing of of a note is called Dharimelli. Vivandhāyi is the rich variety of notes. Miṭṭhāyi indicates the extreme sweetness of sound. The brilliance of a full blown note is called Gītajyoti. The throbbing of a note resembling hakāra is Homphā. Kalā is sound diminished in volume. Chavi is of a tender colour. Kākus are of 6 kinds. Rāga Kāku brings out the native lustre of a rāga. It is of great importance and is called Bhāṣā. Svara Kāku brings out the effect of individual notes. Deśa Kāku introduces into a rāga the complexion of a foreign rāga. When the nature of another rāga is found in a particular rāga it is known as Anyarāgaja. It is also known as Uparāga Bhāṣā, and popularly as Ṭhāya. When the genius of a singer is reflected in a rāga it is known as Kṣetra Kāku and Yantra Kāku is found in the Kinnarī, the flute and the Vīṇā. When a smooth tender note is bent easily without effort it is known as Namana or Navaṇi. When the limb of a rāga occurs in another rāga it is known as Aṁśa. This is of the following 7 kinds. The aṁśa of a janaka rāga is Kāraṇāṁśa. The aṁśa of a foreign rāga is Kāryāṁśa. The aṁśa of secondary categories is Sajātīyāṁśa. Sadṛśaṁśa is similar in two different rāgas. Visadṛśāṁśā, as applied to different rāgas, stands in the relation of vivādīs. Madhyastharāgāṁśa is like the aṁśa called Deśā. Aṁśāṁśa is the occurrence of a foreign aṁśa in a particular aṁśa. (It is to be noted that Pārśvadeva's

treatment of Kākus and aṁśas is similar to that of Śārṅgadeva. In fact the whole of the treatment of this subject by the two authors has close kinship). Ghaṭanā is like the creation of a craftsman-artist. Ākramaṇa catches a note and makes it dominate over other notes which are heard. The crookedness of a note resembling the zigzag pattern of a streak of lightning is called Vaṅkāyi. Kalarava is the sweet emanation of notes. Devadhvani is like the chanting of vedas. Āhata is of 3 kinds, *viz.*, upward, downward and transverse. Avatīrṇaka is the descent of music from Tāra to Mandra like vocal music. Bokala indicates Sthāyas small in form. Sukarābhāsa seems easy to be rendered though really it is difficult. Ucita is that after which Khāca shines (the text is not clear). Buḍḍāyi is the development of ālapti in both a relaxed and an intense manner. Baisiki is the grouping of the notes in the lower reaches of a rāga in a suitable manner and is of 3 kinds, *viz.*, without shaking, partially shaking and shaking completely. The definitions for the Sthāyas Handupāyi, Svasthāna, Avasthāna, Apasthāna, Kaṇḍharaṇe, Ghanatva, Duṣkarābhāsa and Asādhāraṇa are missing in the text.

Śārṅgadeva, the greatest theorist of the medieval age after Bharata, differentiates between four qualities of tone, *viz.*, Khāhula which is born of Kapha, smooth, sweet and beautiful. When it is heard as a full and strong note in mandra and madhya it is called āḍilla. Nārāṭa is a deep note in all the $\bar{3}$ octaves, and is born of pitta. Śārṅgadeva says he had formulated Bombaka, which is sapless, hard, high in pitch, thick and produced by vāta. Their mixture produces the mixed varieties of which numerous examples are given by him. These distinctions in the quality of tone form an important feature of gamakas.

Śārṅgadeva defines the gamaka as the shaking of a note which pleases the mind of the hearer. Kallinātha in commenting on this definition says that this characteristic

of sweetness will alone make the tremor of a note a gamaka.[1] Śārṅgadeva enumerates and defines fifteen kinds of gamakas,[2] *viz*:—

I. TIRIPA. This is a beautiful gamaka resembling the tender quivering sound of the ḍamaru. This is one-fourth of the druta in tempo.

II. SPHURITA. This is one-third of the druta in tempo. Literally interpreted this would mean the throbbing of a note. Kallinātha has refrained from explaining the definitions of these gamakas which according to him are

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1. The gamaka is defined as follows:—
स्वरस्य कम्पो गमकः श्रोतृचित्तसुखावहः ॥ —Śārṅgdeva.

श्रोतृचित्तसुखावह इत्यनेन विशिष्टस्यैव कम्पस्य गमकत्वमिष्टम् । अन्यथा विपरीतस्यापि तस्य गमकत्वं स्यात् ॥ —Kallinātha.

2. लघिष्ठडमरुध्वानकम्पानुकृतिसुन्दरः ।
द्रुततुर्यांशवेगेन तिरिपः परिकीर्तितः ॥
वेगे द्रुततुरीयांशसंमिते स्फुरितो मतः ।
द्रुतार्धमानवेगेन कम्पितं गमकं विदुः ॥
लीनस्तु द्रुतवेगेनान्दोलितो लघुवेगतः ।
वलिर्विविधवक्रत्वयुक्तवेगवशाद्भवेत् ॥
त्रिभिन्नस्तु त्रिषु स्थानेष्वविश्रान्तघनस्वरः ।
कुरुळो वलिरेव स्याद्ग्रन्थिलः कण्ठ्यकोमलः ॥
स्वरमग्रगमाहत्य निवृत्तस्त्वाहतो मतः ।
उल्लासितः स तु प्रोक्तो यः स्वरानुत्तरोत्तरान् ॥
क्रमाद्गच्छेत् प्लावितस्तु प्लुतमानेन कम्पनम् ।
हृदयंगमहुङ्कारगम्भीरो गुम्फितो भवेत् ॥
मुखमुद्रणसंभूतो मुद्रितो गमको मतः ।
स्वराणां नमनादुक्तो नामितो ध्वनिवेदिभिः ॥
एतेषां मिश्रणान्मिश्रस्तस्य स्युर्भूरयो भिदाः ।
तासां (तेषां) तु स्थायवर्गेषु विकृतिः संविधास्यते ॥
—Prakīrṇakādhyāya; Saṅgīta Ratnākara.

		plain enough to be clearly understood.
III.	KAMPITA.	This is half of a druta in tempo. This means the shaking of a note, but except for the difference in speed Śārṅgadeva does not clearly explain how this gamaka differs from sphurita.
IV.	LĪNA.	This is executed in Druta speed.
V.	ĀNDOLITA.	The tempo of this is laghu.
VI.	VALI.	The tempo of this gamaka is irregular.
VII.	TRIBHINNA.	This indicates a thick note produced continuously in all the 3 sthānas.
VIII.	KURUḶA.	This is the same as Vali, but differentiated from it by being a soft knotty guttural sound.
IX.	ĀHATA.	This strikes the preceding notes and returns to its origin.
X.	ULLĀSITA.	This reaches the notes which are placed one over another in regular ascent.
XI.	PLĀVITA.	This is a shake which is a pluta in tempo.
XII.	GUMPHITA	The deep, restive and charming sound of the huṁkāra is indicated by this.
XIII.	MUDRITA.	is the gamaka produced by the closing of the mouth.
XIV.	NĀMITA.	is so-called because it bends down the notes which are comprised in it.

XV. MIŚRA. is derived by mixing up all the foregoing varieties and its forms are numerous. Śārṅgadeva refers the reader to his treatment of sthāyavāgas for their definition.

Kallināṭha in explaining the Miśra, points out that the combination of two, three or four, as the case may be, among the gamakas will make a Miśra, and not all of them taken together. Otherwise the latter would constitute just one category and not numerous varieties according to the definition.

Before examining the sthāyavāgas, an estimate of Śārṅgadeva's contribution on the subject may be made. Śārṅgadeva leads all succeeding theorists in this respect as in others. Later writers look up to him as their authority on the subject. Considering the contribution of his predecessors, Śārṅgadeva might be said to have given authoritative and exhaustive expression to the quintessence of the theory and practice in this respect of his own days and of earlier times. But his definitions of gamakas are limited by the fact that they are rather descriptive than analytical. In describing gamakas, stress is laid on their duration. In fact this is the only characteristic which we are enabled to know with a fair amount of accuracy. But the actual use of the gamakas is not illustrated with the aid of svaras either in the text or the commentary. This neglect of the need and importance of employing notation to convey an exact idea of the graces resulted in the lack of completeness and precision in the definitions which are otherwise valuable and comprehensive. (A form of notation is employed in the Ratnākara to illustrate rāgas, etc., but is not used in the exposition of the gamakas). And Śārṅgadeva, unlike Somanātha, omits the explanation of how the graces are produced in instrumental music, *i,e.*, on the Vīṇā and thus

fix their forms. So we are left with descriptive notes mostly explaining the different impressions created by the gamakas on the hearer's mind.

The stress laid on the duration of gamakas is a valuable contribution of the Ratnākara to the definition of this complex theme. The time values of the gamakas are definitely fixed and so far their nature is made definite.

In some cases the names of the gamakas are alone enough to explain their nature, *e.g.,* Sphurita can be taken to indicate the throbbing of a single note, Kampita may mean a larger shake, and Āndolita a free swinging of the note. A Vali, from definition, can mean a composite gamaka produced by different modes of the shake at different velocities. A Līna is the merging of a note into another. The Tribhinna consits of a leap extending as far as an octave up and down from a given note, in other words, an exaggerated Zāru. The Plāvita is a shake with duration equal to a pluta, the largest unit of time employed. The tempo of the Nāmita is not given but from the description we can infer that they resemble the Varika. (In this connection it may be noted that the definitions of the Gamakas given in the Ratnākara are merely repeated by the succeeding Sanskrit writers, but freely paraphrased and explained in terms of contemporary practice by recent authors who have expounded the subject in the vernacular languages. The latter will be noticed separately.)

The Kuruḷa lays stress on the tonal quality of the gamaka, indicating the peculiar colour which the voice can impart by sounding gutturally. The definition does not throw further light but is sufficiently explanatory. To the same category belongs the Tiripa, the Gumphita (the name itself indicating the nature of the gamaka), and the Mudrita produced by closing the lips when singing.

The Miśra being a mixed variety is indefinite though real and frequently employed.

Taking into account all the gamakas dealt with, they can be placed in the following categories:—

(1) Generally descriptive. Under this head can be placed the Sphurita, the Kampita, the Āndolita, the Vali, the Līna and the Tribhinna.

(2) Gamakas differentiated according to their tonal quality, *viz*:—

(*a*) Varieties which have reference only to vocal music, *i.e.*, the Gumphita, the Mudrita and the Kuruḷa.

(*b*) Those which have reference to instrumental music. Among the fifteen, there is no explicit reference to these varieties. These are dealt with separately.

(3) Gamakas differentiated according to the order of the svaras they govern, *e.g.*, Āhata, Ullāsita and Tribhinna.

(4) The Miśra is a separate category by itself and is of infinite variety being made up of more than one of the several gamakas.

(5) Gamakas distinguished by the time of their duration. Śārṅgadeva gives the time value of only a few gamakas, *e.g.*, Sphurita, Līna, etc. Can all the gamakas be limited in respect of their duration? It would seem that not all of them can be formed by the hard and fast rule of time value, since at least a few gamakas would shape themselves according to the exigencies of song. Hence there is justification for a separate group of gamakas distinguished by the extent of their duration.

STHAYAVAGAS.—As has been observed already, Śārṅgadeva says that the various forms of the Miśra

gamakas are made manifest in his exposition of Sthāya-vāgas. He defines Sthāya as a limb or part of the rāga, and Vāga as denoting gamakas.[1] Kallinātha explains that vāgas are gamakas employed in the limb of a rāga which is called a sthāya; the limb or avayava of a rāga, being a collection of some notes like the Aṁśa and others, resting or basing itself on any one among the Nyāsa, Apanyāsa, Sannyāsa or Vinyāsa notes. Gamaka is dialectically known as Vāga.

The Sthāyas are 96 in number as enumerated by Śārṅgadeva and are divided into the following four groups:—

I. The ten well-known and distinct Sthāyas. (असंकीर्णलक्षणाः प्रसिद्धा दश स्थायाः) They are:—

(1) The Sthāyas of Śabda. (शब्दस्य) This indicates a cycle of Sthāyas each commencing at the tone where its predecessor ended.

(2) Of Ḍhāla. (ढालस्य) This indicates throbbing movement like that of a pearl.

(3) Of Lavanī. (लवन्याः) This consists of a very tender bending of a musical phrase.

(4) Of Vahani. (वहनेः) The Vahani is either an ascending or descending or Sañcārī shake.

Among its subordinate varieties are two which differ with reference to their application to gīta or ālapti (which, as Kallinātha points out, mean nibaddha and anibaddha gīta respectively). Again it is of two kinds, *viz.*, Sthirā and Vegāḍhyā. (स्थिरा, वेगाढ्या) Also it originates in three ways, sweetly from the throat, from the head and from the body taking its rise in the heart. There is

1. रागस्यावयवः स्थायो वागो गमक उच्यते ॥ —संगीतरत्नाकरः

another division of the Vahani into two varieties:—

(*a*) Khuttā [खुत्ता (सुप्ता?)] in which the notes seem to penetrate into this Sthāya.

(*b*) Utphullā (उत्फुल्ला) in which the notes gush forth from it upward. Vali which was defined among gamakas has the same varieties as this Sthāya.

(5) Of Vādyaśabda. (वाद्यशब्दस्य) In this sthāya the rāga is rich with the sounds of instrumental music.

(6) Of Yantra. (यन्त्रस्य) This sthāya is mostly found only in the playing of Yantras (Instruments).

(7) Of Chāyā. (छायाया:) Śārṅgadeva says that Chāyā is Kāku, which is explained by Kallinātha to be a modification of sound. The following kinds of Kāku are defined:—

(*a*) Svarakāku. (स्वरकाकु) This is the effect of foreignness produced in a rāga, owing to the excess or deficiency of śrutis. Explaining this passage Kallinātha shows how the Svarakāku is got by deviating from the number of Śrutis fixed for each note by giving the following illustration. When Ṣaḍja, (consisting of 4 Śrutis) falls short by 2 Śrutis it gives the impression of Niṣāda, and when Niṣāda (composed of 2 Śrutis) appropriates 2 of the Śrutis of Ṣaḍja and assumes 4 Śrutis on the whole it is conceived as Ṣaḍja. Also in the case of other notes, the impression created by such tonal modification is known as Svara Kāku.

(*b*) Rāga Kāku (रागकाकु) expresses the native colour of a rāga.

(*c*) Anyarāga Kāku (अन्यरागकाकु) imports into a rāga the complexion of another rāga.

(*d*) Deśa Kāku (देशकाकु) expresses provincial characteristics.

(*e*) Kṣetra Kāku. (क्षेत्रकाकु) The body is known as Kṣetra and the varied and peculiar characteristics of each individual give rise to this Kāku expressed in numerous forms in rāgas.

(*f*) Yantra Kāku (यन्त्रकाकु) is produced on Yantras like the Vīṇā, the flute, etc. Those Sthāyas are of Chāyā which acquire a foreign colour in the manifestation of a chāyā (complexion), not belonging to them.

(8) Svaralaṅghita. (स्वरलङ्घित) This consists of frequent leaps over many notes in the middle.

(9) Prerita. (प्रेरित) In this Sthāya notes are pushed forth up and down as well as transversely.

(10) Tīkṣṇa. (तीक्ष्ण) In this the notes of the tāra octave sound sharp with the strength of all their śrutis.

II. The 33 well known and mixed Sthāyas

(त्रयस्त्रिंशद्गुणकृतभेदाः प्रसिद्धाः स्थायाः)

Kallinātha explains that these differ from one another chiefly by the peculiarity of their attributes and that they are not intermingled for this reason. . .

(1) Of Bhajana. (भजनस्य) Bhajana is the bringing forth of all the excellences of a rāga by special effort, and characterises this Sthāya.

(2) Of Sthāpanā. (स्थापनायाः) The Sthāyas under this head are executed by being established at each step, *i.e.*, after each movement they are fixed and subjected to elaborate treatment.

(3) Of Gati. (गतेः) The movement of the music of these sthāyas is like the gait of an intoxicated elephant, sportive, resplendent and sleek with sweetness.

(4) Of Nāda. (नादस्य) In these the tones are full and resounding.

(5) Of Dhvani. (ध्वनेः) Here the notes are sustained and considerably prolonged.

(6) Of Chavi. (छवेः) These are bright with tender brilliance.

(7) Of Rakti. (रक्तेः) These abound in sweetness and charm.

(8) Of Dhṛta. (धृतस्य) These Sthāyas are literally borne or supported. *Cf.* the definition in the Saṅgīta Sudhā.

(9) Of Bhṛta. (भृतस्य) These are so named because the tones here are carried along.

(10) Of Aṁśa. (अंशस्य) The Avayava of an alien rāga in a particular rāga is called aṁśa. This is of seven kinds. Kallināṭha explains that when a group of notes forming a limb of a particular rāga is inserted for the sake of effect in another rāga, it is technically called aṁśa. This is not the same as the well-known note aṁśa. What is the difference between a Kāku and Aṁśa as defined

in a rāga? By Anyarāga Kāku is meant the chāyā of a rāga belonging to it but strongly resembling that of another rāga. Aṁśa means that a phrase, though not belonging to a particular rāga, is borrowed from another rāga like jewellery and made to adorn the former. The 7 kinds of Aṁśa are:—

(*a*) Kāraṇāṁśa.
(*b*) Kāryāṁśa.
(*c*) Sajātīyāṁśa.
(*d*) Sadṛśāṁśa.
(*f*) Visadṛśāṁśa.
(*g*) Madhyāṁśa.
(*h*) Aṁśāṁśa.

Cf. Pārśvadeva.

(11) Of Avadhāna. (अवधानस्य) These can be perceived by the mind by its own action.

(12) Of Apasthāna. (अपस्थानस्य) When a full and rich note emerges at its place without effort, it is known as Svasthāna. When it rises as a result of special labour, it is called apasthāna. The Sthāyas of apasthāna originate in apasthāna.

(13) & (14) Of Nikuti (निकुतेः) and Karuṇā. (करुणायाः) These are named according to their etymological significance.

(15) Of Vividhatva. (विविधत्वस्य) These consist of a series of phrases remarkable for variety and charm.

(16) Of Gātra. (गात्रस्य) These subside within the body after having made a sharp sound.

(17) Of Upaśama. (उपशमस्य) In these a tranquil effect is produced.

(18) Of Kāṇḍāraṇā. (काण्डारणायाः) Śārṅgadeva says that these are well-known; the music of these sthāyas is easy and fluent, sweet and tender, impassioned and is made gradually very thin. The final treatment is evidently what is known as pianissimo in Western music.

(19) Nirjavanānvita Sthāyas. (निर्जवनान्वित) These are at the commencement of the note.

(20) Gāḍha. (गाढ) This is released in a dilatory manner.

(21) Lalita Gāḍha. (ललितगाढ) This is the same as the above characterised by smoothness.

(22) Lalita (ललित) is sportive.

(23) Lulita (लुलित) is smooth and shaking.

(24) Sama (सम) is without rapidity or slowness.

(25) Komala (कोमल) is true to its sense, *i.e.*, tender.

(26) Prasṛta (प्रसृत) is stretched out or extended.

(27) Snigdha (स्निग्ध) is bereft of roughness.

(28) Ukṣa (उक्ष) is luminous.

(29) Ucita (उचित) is self-explanatory, *i.e.*, appropriate.

(30) Sudeśika (सुदेशिक) is loved by scholars.

(31) Apekṣita (अपेक्षित) is sought after for the completion of a previously rendered sthāya.

(32) Ghoṣa (घोष) is pleasing in a Vali, Vaha(?) and Vahanī, and is very loud in the Mandra Sthāyi.

(33) Svara Sthāyas (स्वर) are sonourous and sweet in the Mandra octave.

III. The twenty distinct Sthāyas. (ईषत्प्रसिद्धा विंशतिसंकीर्णलक्षणाः।) Kallinātha remarks that though these do not differ from the Sthāyas already explained in

distinctness it must be noted that this list is not so very well-known as the other. The Sthāyas are:—

(1) Of Vaha. (वहस्य) In these the notes shake as if they carry a load.

(2) Of Akṣarāḍambara. (अक्षराडम्बरस्य) In these a prominent display is made of syllables or letters.

(3) Ullāsita. (उल्लासित) In this the notes are sent up with speed.

(4) Taraṅgita. (तरङ्गित) The notes in this toss like the waves of the Ganges.

(5) Pralambita. (प्रलम्बित) In this sthāya the music moves like the swinging about of water in a half-filled jar.

(6) Avaskhalita. (अवस्खलित) stumbles downward from the Mandra with speed.

(7) Trāṭita (त्राटित) pauses long at a svara, reaches the Tāra octave like fire and returns. (Dattila's Alaṅkāra Bindu is identical in definition.)

(8) Sampraviṣṭa (संप्रविष्ट) denotes a loud note in avaroha, similar to the above.

(9) Utpraviṣṭa (उत्प्रविष्ट) is the same as the above in āroha.

(10), (11) & (12) Nissāraṇa (निःसारण) flows out; Bhrāmita (भ्रामित) is swung round or revolved; Dīrgha Kampita (दीर्घकम्पित) is a prolonged shake.

(13) Pratigrāhyollāsita (प्रतिग्राह्योल्लासित) is beautiful like the ball which in the game is thrown up again and again and caught.

(14) Alambavilambaka (आलम्बविलम्बक) is quick in the beginning and ends in vilamba (slow) style.

(15) Troṭitapratīṣṭa. (त्रोटितप्रतीष्ट) Taking "Tāra" and "Mandra" this sthāya first tears either of the two as with a bill or beak and then seizes the other.

(16) Prasṛtākuñcita. (प्रसृताकुञ्चित) This sthāya extends and contracts its form.

(17) Sthira (स्थिर) is the shake applied to the Sthāyivarṇa.

(18) Sthāyuka. (स्थायुक) The disposition of this sthāya consists of pausing again and again on one or two or three notes.

(19) Kṣipta (क्षिप्त) is extended upward.

(20) Sūkṣmānta (सूक्ष्मान्त) becomes minute towards its close.

IV. The 33 mixed and unfamiliar sthāyas. (त्रयस्त्रिंशत्संकीर्णलक्षणाः स्थायाः) Kallinātha says that these do not differ much from Bhajana, etc., already explained. Like them they are differentiated by the difference in their characteristics, but unlike them these are not very well-known. The Sthāyas are:—

(1) Of Prakṛtistha (प्रकृतिस्थस्य) in which the tone shines of its own accord bereft of Dhṛti, Bhṛti, etc.

(2) Of Kalā (कलायाः) in which the notes are made thin.

(3) Of Ākramaṇa (आक्रमणस्य) which are exceedingly admissible.

(4) Of Ghaṭanā (घटनायाः) which look like the creation of a mechanic artist.

(5) Of Sukha (सुखस्य) which yield joy.

(6) Of Cāli. (चालेः) Cāli is known as Jakkā which gives the name to these Sthāyas.

(7) Of Jīvasvara. (जीवस्वरस्य) Aṁśa is called Jīvasvara and is predominant in these Sthāyas.

(8) Of Vedadhvani. (वेदध्वनेः) In these the notes are like the sound of the Vedic Chant.

(9) Of Ghanatva. (घनत्वस्य) These are strong inside, (heavy and ponderous).

(10) Śithila (शिथिल) is languid and relaxed.

(11) Avaghaṭa (अवघट) is difficult of execution.

(12) Pluta (प्लुत) is extremely slow.

(13) Rāgeṣṭa (रागेष्ट) is what is desirable for the completion of a rāga.

(14) Apasvarābhāsa (अपस्वराभास) looks like a false or unmusical note.

(15) Baddha (बद्ध) denotes a suppressed or paralysed sthāya.

(16) Kalarava (कलरव) Sthāyas abound in sweet sounds.

(17) Chāndasa (छान्दस) is liked by skilled persons.

(18) Sukarābhāsa (सुकराभास) means a sthāya which seems to be easily executed but is really difficult to render.

(19) Saṁhita (संहित) approaches the mandra octave from the tāra like the sound of a bell.

(20) Laghu. (लघु) In this the Dhruva and the Ābhoga are without heaviness.

(21) Antara. (अन्तर) The definition of this in the original is not explicit. Probably this indicates the Sthāya used intermediately between others.

(22) Vakra (वक्र) is tortuous but easily rendered.

(23) Dīptaprasanna (दीप्तप्रसन्न) is rendered in the Tārasthāyī.

(24) Prasannamṛdu (प्रसन्नमृदु) is soft in tone and easy.

(25) Guru (गुरु) is heavy.

(26) Hrasva (ह्रस्व) is diminutive or small.

(27) Śithilagāḍha (शिथिलगाढ) is relaxed and again tightly pressed together.

(28) Dīrgha (दीर्घ) is prolonged.

(29) Asādhāraṇa. (असाधारण) This is easy and very musical because of the excellence of tone or voice; this belongs to one category and is not common to all.

(30) Sādhāraṇa (साधारण) resembles all categories.

(31) Nirādhāra (निराधार) does not demand Vahani, etc., for its execution, *i.e.*, is independent of others.

(32) Duṣkarābhāsa (दुष्कराभास) is easy but seems difficult to render.

(33) Miśraka (मिश्रक) is defined to be the result of mixture. Śārṅgadeva says that 'the miśrakas' are of endless variety and that only a few of them are given in order to give a general survey of their nature. A Miśra is named after a particular sthāya if that is predominant; if that occurs as often as others, the Miśra has a composite name, *e.g.*, Tiripāndolita, Līnakampita, Kampitāhata, Tiripasphurita, etc. Śārṅgadeva mentions 36 of these and adds that others of this kind are to be reckoned in a similar manner.

The contribution of Śārṅgadeva is as great in this subject as in others. His treatment is comprehensive and

thorough; it has the uinque characteristic of having been influenced by the views of his predecessors, many of whose works are not available now, and of being considered as the standard by subsequent writers.

Śārṅgadhara in his Paddhati says that gamakas are of seven kinds, *viz.,* Sphurita, Kampita, Līna, Stimita (probably Tiripa), Āndolita, Āhata and Tribhinna.[1] It is surprising that Śārṅgadhara takes no notice of Śārṅgadeva's classification of gamakas but follows Nānyadeva and Pārśvadeva.

Haripāla also, in his Saṅgīta Sudhākara gives the gamakas as consisting of 7 kinds, *viz.,* Kampita, Sphurita Līna, Tribhinna, Tirupa, Āndolita and Āhata. His definition of gamakas is the same as that of Pārśvadeva. The lakṣaṇa of each gamaka, as regards time value and other features is the same, according to the two writers. Only Haripāla uses new metaphors to describe the general effect of one or two gamakas. For instance he compares Sphurita to the throbbing of lightning and Tirupa to the sound of the drum.

Lakṣmīnārāyaṇa's work, Saṅgīta Sūryodaya is of special importance since it was written in the heyday of the Vijayanagar Empire. He gives the excellences and defects of sound mentioned in the Ratnākara. He defines gamaka as the shaking of a note which charms the ear. All the 15 kinds of gamakas enumerated by Śārṅgadeva are given by him. Their definitions are the same. Lakṣmīnārāyaṇa also gives the names and definitions of the 96 Sthāyas of the Ratnākara, besides the vāgas given therein.

Rāmāmātya in his Svaramelakalānidhi does not treat the subject of gamakas, but only makes a reference to their use in singing.

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1. स्फुरितं कम्पितं लीनं स्तिमितान्दोलितावपि ।
आहतं त्रिकभिन्नं च गमकं सप्तधा स्मृतम् ॥ —शार्ङ्गधरपद्धतिः

Puṇḍarīka Viṭṭhala in his Sadrāgacandrodaya merely reproduces the account of gamakas given by Śārṅgadeva in the same order. For Ratnākara's Gumphita he gives the name Humphita. His definitions are the same as that of the Ratnākara. A brief account of Sthāyavāgas based on the Ratnākara is given.

Somanātha is one of the most important writers after Śārṅgadeva. His treatment of the subject is striking, and he improves on Śārṅgadeva himself by employing an efficient system of notation to illustrate gamakas. Basing the exposition on the technique of Vīṇā-playing he explains the use of various gamakas with reference to different Rāgas. This is an unique feature, which specially distinguishes his work and which we miss in the most famous of the authors of later times. His is the first work to explain the topic with reference to the playing of theVīṇā. The names of the gamakas are all new and coined by him, though many of the graces can be identified with Śāraṅgadeva's. But there are some graces which can be called original contributions like Paratā, etc. At least they are not mentioned in older works in such clear detail and defined with such precision. As regards the notation employed, it might be said that in this as well as in the Prastāra of Meḷas a rare type of originality is revealed by Somanātha. In the light of existing data, he is the first writer who invented an elaborate system of notation, capable of expressing some of the most complex gamakas. An elementary form of notation did exit previously and Śāraṅgadeva employed it in the illustration of Rāgas. But there is no proof to show that that system expressed gamakas. The expression of gamakas was exactly what was achieved by Somanātha's notation. But curiously enough Somanātha makes no reference to the gamakas or Sthāyavāgas of the Ratnākara, but deduces the use of gamakas from the technique of the playing on the Vīṇā. In his commentary he speaks of Vādanabhedas

prominent among which are twenty. These, according to him, are the most popular among gamakas like Tiripa, Sphurita, etc., and Sthāyas, and prominent in Deśi music. Most of the names are coined by him so as to be explanatory of the technique of the Vīṇā. The varieties are:—

(1) PRATIHATI. This consists of two pluckings of the string and producing the same note. The string is to be struck; by very quickly moving up the finger the first note should be slightly revealed and a second stroke equal to the first should be made. The resulting sound resembling huṁkāra is Pratihati. This is descriptive of the sound produced. No time value is given.

(2) AHATI. This amounts to the same as pratihati in effect without the huṁkāra. Also the method of producing this grace is different. After a note is produced, another note should be revealed without a separate stroke. It is to be noted that from the description that this grace is applicable in both ascent and descent.

(3) ANUHATI. This belongs to the same class as Pratihati but differs only in technique. A note is produced by a single beat, and

by a quick movement of the finger revealing the previous Svara. The resulting sound resembling huṁkāra is the characteristic of this gamaka.

(4) AHATI. It is the same as Anuhati but differs in emanating without nakhāghāta (stroke of the nail) and results in a majestic sound. The tonal quality of the gamaka places it in a category by itself. This is an important gamaka and familiar in modern usage. The method of producing it is well explained in the commentary.

(5) PIḌA. This is produced by touching with force a note with the "stomach" of the finger and instantaneously revealing the foregoing note by a dexterous movement.

(6) DOLANA. This consists of ākarṣaṇa, vikarṣaṇa, āgamana and nivartana. By this is meant the pulling of the note to a particular point (of the octave), pulling away from the octave, the leading of a śruti towards another, and releasing that note from that point to its former position. Somanātha explains that with a

single ghāta a note is to be stretched to its utmost limits, so as to reach the boundary of its śrutis and even beyond, and gradually to be resolved into the note from which it started.

(7) VIKARṢA — is the same as Dolana with the difference that there is no returning to the starting point. It is arrested in a state of progress.

(8) GAMAKA. — The repeated application of dolana is gamaka. By one stroke dolana is to be executed slowly three or four times. The use of the term gamaka is noteworthy inasmuch as it signifies a category or species, and not a genus as in the Ratnākara. It is here the proper name of a particular grace and this has to be distinguished from the connotation of the word gamaka as understood at present. No time value is given.

(9) KAMPA. — This is produced by shaking the note twice or thrice and executing the whole within one-fourth of the time taken by a dolana. This is produced by a single beat. Thus Gamaka and Kampa

differ chiefly with regard to tempo.

(10) GHARṢAṆA. This is produced by a single beat revealing other notes rapidly. After the stroke by gharṣaṇa the preceding or succeeding notes are manifested. This is a glide.

(11) MUDRĀ. A note is struck, and by the power of that stroke its preceding note is revealed; then by fixing the finger on the original note the other note is hidden or muffled and this muffling is denoted by mudrā. This differs from anuhati in the fact that the latter results in a deep sound as the effect of the quick movement of the finger. This difference is pointed out by Somanātha in the commentary.

(12) SPARŚA. This is the same as Āhati. Only here the abandoned note is released rapidly. When sounding a note the next higher note is to be lightly touched and the original note is quickly revealed.

(13) NAIMNYA. This results from a strong beat. The wire seems to go down by the forcible plucking.

(14) PLUTI. By pulling eight notes are got. By one stroke and pulling the string, eight notes are produced in quick succession. The commentary explains that it is a lengthened form of gharṣaṇa.

(15) DRUTI is quick playing with the aim of getting notes other than the initial svara.

(16) PARATA. This is the process of producing the next note from the position of the original note. Somanātha explains it as being produced by placing the finger on the fret of Sa, etc., and by pulling the string, sounding Ri, etc.

(17) UCCATA. This indicates the production (by the same process as Paratā) of the third note from the initial Svara.

(18) & (19) The two kinds of NIJATA:—

(*a*) The Nijatā of Paratā. By this is meant the gradual descent of the extended note (by the loosening of the wire) to the starting note, *e.g.,* the resolution of Ri, etc., in Sa.

(*b*) The Nijatā of Uccatā. This consists of the gradual descent of the grace from gāndhāra to ṣaḍja by the same process as indicated in (*a*).

Both kinds of Nijatā, according to Somanātha are to be executed by one single stroke on the wire. However according to lakṣya, he observes in some

places there occur 2 beats, the second coming in the middle of the grace.

(20) ŚAMA. This indicates slow movement. (This is opposed to Druti). According to Somanātha, Śama is the pause accompanying the production or revelation of a note.

He calls the foregoing 20 varieties as Vādanabhedas and adds two more terms to the nomenclature of graces, *viz.,* Mṛdu and Kaṭhina which, he points out, indicate Sthāna. The Mandra octave is Mṛdu and the Tārasthāyī is called Kaṭhina.

The whole of Somanātha's treatment is characterised by originality of the first order and to-day we can faithfully reproduce these vādanabhedas with almost absolute accuracy.

The next outstanding treatise is the Saṅgīta Sudhā of Govinda Dīkṣita. To Govinda Dīkṣita belongs the credit of building on the foundations supplied by Śārṅgadeva. In fact we owe to his tremendous influence the continuity of tradition which links together the basic principles and the fundamental factors of the system of Śārṅgadeva and the Karnātic music of the present day. Govinda Dīkṣita's definition of gamaka is the same as that of Śārṅgadeva. He quotes with approval the definition of gamaka by Pārśvadeva. He enumerates the fifteen varieties, which, it is important to note, he says, was in accord with contemporary practice. The definitions of the various gamakas are akin to Śārṅgadeva's. Gumphita is called by him Humphita. Dīkṣita deals with vāgas and the 96 Sthāyas, according to the school of Mataṅga and others, as he says, in detail; he enumerates them in the same order as the Ratnākara. In fact the whole topic is freely paraphrased from the Ratnākara. Taking the

treatment of the subject as a whole, Govinda Dīkṣita might be said to have popularised the system of Śārṅgadeva which, it is essential to note, was in agreement with the then prevailing lakṣya.

Veṅkaṭamakhin defines gamaka as the charming shake of the note, and adds another definition which is virtually a paraphrase of Pārśvadeva's definition.[1] He mentions all the 15 varieties of the Ratnākara: Vali according to him consists of the shake of notes which move in a crooked manner with irregular velocity. The Vali when it becomes straight is called Kurula. Otherwise his account of the gamakas is the same as that of the Ratnākara. He does not deal with Sthāyas or Vāgas. He cites the gamakas as propounded by Bharata and others, though in the current rescensions of the Nāṭya Śāstra the gamakas are not mentioned.

In Ahobala's Saṅgīta Pārijāta (according to the available edition) the treatment of the subject is fragmentary. Some of the names of gamakas are similar to those given in the Ratnākara and some are new. The total number of gamakas defined is 17 and they are as follows:—

(1) KAMPITA. This means the production of a pair of notes by two beats. This explains only the mode of producing the gamaka, for which no time value is given. In these respects it differs from the Ratnākara.

(2) PRATYĀHATA. A pair of notes is produced by a single beat. The

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1. स्वरस्य कम्पो गमकः श्रोतृचित्तसुखावहः ॥
स्वीयस्थानश्रुतिगतच्छायामन्याश्रयामपि ।
छायां गमयतीत्येष गमकः परिकीर्तितः ॥

—Veṅkaṭamakhin.

	production is not distinguished as belonging to either ascent or descent, as is done in modern practice.
(3) DVIRĀHATA.	This is explained as a repetition of a stroke on a single note (Both numbers two and three are defined in the manner of Somanātha's Pratihati and Āhati, from which they may be derived. It is important to note that these gamakas are peculiar to and characteristic of the Vīṇā, though they are capable of being distinctly produced vocally.)
(4) SPHURITA.	This denotes the production of a pair of notes by a single beat in the manner known as fortissimo. Emphasis is laid on this characteristic. The Ratnākara gives time value for the gamaka but Ahobala does not.
(5) ANĀHATA.	This is the note produced after the beat. This is described as being mild (Śāntasaṁjña) by reason of its softness.
(6) TIRIPA.	The time value alone is given. The definition is

	an exact copy of that of the Ratnākara.
(7) GHARṢAṆA.	This results from producing or touching eight notes from the starting svara. This is the same of Somanātha's Pluti.
(8) AVAGHARṢAṆA	is interpreted in the same manner as gharṣaṇa. This probably means the gharṣaṇa in descent.
(9) VIKARṢAṆA	is explained as a grace starting from a note and extending to others, while remaining in its place (the original fret). This corresponds to Somanātha's Paratā and Uccatā.
(10) SVASTHANA	extends forward and retreats to the original starting point.
(11) AGRASVASTHANA	starts on a note, goes backward or down the octave and returns to the starting point.
(12) KARTARI.	This is an important grace consisting in the production of a Varṇa with Ṛepha. This has reference to the whirring noise in the turn given to a musical phrase.
(13) VAHI	is produced in order by the middle and forefingers. This definition is some-

what vague and the reference is evidently to the Vīṇā.

(14) SPHUṬA. The Kriyā (or a musical elaboration) has this as the aim, *i.e.*, ends on this. This may be treated as a variety of svasthāna, with the emphasis on the final.

(15) NAIMNYA corresponds to Somanātha's Naimnya but is rather vague. Ahobala says that this occurs when one note overcomes another.

(16) ḌHĀLA pervades two notes. The exact nature of the gamaka is vague. Śārṅgadeva defines it in a different manner.

(17) MUDRĀ is stated to be a variety of Humphita, and is not defined separately.

Ahobala is not bound by the classification of Śārṅgadeva. He seems to base his definitions on the strength of practice and to borrow some terms and concepts from Somanātha. They agree when they illustrate graces produced on the Vīṇā. Ahobala has to his credit a number of graces which can be called his own contributions to the existing number.

Somanārya (whose date is later than Somanātha's) in his Nāṭya Cūḍāmaṇi gives much valuable information (which however is fragmentary). He mentions Āyuta, Pratyāyuta, Ḍhālu, Kampita, Āhata, and Pratyāhata. For some of these the definitions are lacking. Kampita according to him is quick movement in the three Sthāyīs. Where

the notes are elongated it is called Eḍupu. Ḍhālu pervades 'the long and the short and the three' (according to the text); the notes in the middle are called agra. The charming expansion of notes is called Muktā. Śārṅgadeva is quoted as giving the following excellences of musical rendering:—Clearness, fulness, lustre, beauty, adornment, evenness, colour, softness, richness of tone and sweetness.

Basavappa Nāick in his Śiva Tattva Ratnākara enumerates the 15 kinds of gamakas found in the Saṅgīta Ratnākara. He deals with alaṅkāras, but not Sthāya-vāgas. His adoption of the classification of the Ratnākara throws light on the practice in his time in the Kannaḍa country.

Passing on to the group of Oriya works of the 18th century, we find the Saṅgīta Saraṇi enumerating only seven kinds of gamakas in all, *viz.* Kampita, Sphurita, Līna, Tribhinna, Tiripa, Āhata and Āndolita. Kampita is the shake of the note with Druta speed; Sphurita is one-third of a Druta in Tempo. The shake is of charming tone. Līna is of Druta speed. Tribhinna is of restless gait and moves in the navel, heart and throat. Tiripa is like the gentle sound of the drum. It is one-fourth of a Druta in speed. Āhata beats its foregoing neighbour and returns. Āndolita comes to a rest in laghu speed. From the text (which is not very clear) the author is to be understood as stating that the well-known division of gamakas into 15 kinds suffers from the defect of overlapping.[1]

The account of gamakas in the Saṅgīta Nārāyaṇa is the same as in the Ratnākara. But the author adds that gamaka, which consists of a slight shake of the Svara, is of 7 different kinds owing to the difference of notes. The explanation is that the gamakas are of 7 different forms based on the difference of the seven notes. The

1. यत्तु क्वचिद्र (?) गमकस्य पञ्चदशविधत्वं दृश्यते तत्परस्परं साङ्क्षिण (साङ्कर्येण ?) बोध्यम्। —सङ्गीतसरणिः

author adds that this classification is found in the Nārada Saṁhitā, but says nothing more to elucidate the definition.[1]

In the Gīta Prakāśa, Gamaka is defined as usual. Gamakas are devided into seven kinds based on the seven Svaras. They are:—

(1) Tripañcaka (thrice the Druta is speed).
(2) Sphurita (same speed).
(3) Kampita (twice the Druta).
(4) Līna (Druta).
(5) Āndolita (Laghu).
(6) Tribhinna moves in Druta speed in all the three sthānas.
(7) Āhata strikes the foregoing note (it is called Antra in the text, probably a mistake).

The gamakas are to be practised at dawn, during singing and also standing in water.[2]

Locana Paṇḍita in his Rāgataraṅgiṇī refers to graces as Kampita and others and for their treatment refers the reader to his Rāga Saṅgīta Saṅgraha (which is not available at present).

Śrīnivāsa Paṇḍita in his Rāgatattva Vibodha discusses the subject minutely and makes references to the playing of the Vīṇā. He defines gamaka as the characteristic property of the excellence and distinction achieved in execution. Gamakas achieve beauty out of it and hence

1. किञ्चित्तु स्वरस्य कम्पो गमकः स्वरभेदात् सप्तधा इति सप्तस्वरभेदेन सप्तप्रकारो भवतीत्यर्थः। इदं तु नारदसंहितायां दृष्टम्।

—सङ्गीतनारायणः

2. स्वरस्य कम्पो गमकः श्रोतृचित्तसुखावहः ॥
सप्तस्वरसमायोगात् सप्त भेदा भवन्ति च ॥
स्फुरितं कम्पितं लीनं तथा चान्दोलिताभिधम् ॥
त्रिपञ्चकाख्यं गीतज्ञैस्त्रिभिन्नं चेति कीर्तितम् ॥
....
शरीरस्थोऽपि गमकः साधनीयः प्रयत्नतः ॥
प्रत्यूषे गीतसमये जलेऽभ्यस्तश्च सिद्धिदः ॥

—गीतप्रकाशः

are so called.[1] The steady note resulting out of the contact of the right hand fingers with the wire attains exclusiveness, without shake, etc. If a note resembles humkāra it is humkṛta. A note is born of one throbbing movement, its throbbing being perceptible and imperceptible with many notes in the middle, and it again emerges clear when the chin is placed at the region of the heart and the voice gives forth the sound 'hum.' When a note, though produced at a high pitch, goes to a low pitch, and when it is produced in a low pitch with imperceptible middle notes, emanating as the result of a gentle stroke, it is known as cyāvita svara. The cyāvita notes are so called because out of them rises a falling motion. The voice is also to be known by the throwing up of the mouth; (the definition in the original is not clear). When a note fades and expands, it is known as Udgharṣaṇa. Avagharṣaṇa is to be known similarly from practice. In Vikarṣaṇa a foreign note is drawn at a particular spot. The overcoming of the note by the finger is naimnya. Purvāhata is named after the kriyā that is meant by the expression. In Hatāhata two notes are sounded at one and the same place. Hata and Tārāhata are indicative by themselves. Tiripa exceeds others by one fourth of Druta. By Śruti and time values these are thus distinguished in different ways. When at a spot a note is struck twice it is dvirāhata. By ārohaṇa and avarohaṇa, it (the gamaka) is differentiated in two ways. In Ḍhālu the Kriyā of the left fingers overpower two notes and go up or down. Anāhata indicates what occurs over the stroke. Sphurita gamakas are soft and are otherwise called Śāntasamjña. (According to Ahobala, Anāhata is called Śāntasamjña). Mudrā is not separately defined, since it is a part of Humphita; (the same statement is made by Ahobala). This is because Mudraṇa of the Saṅgīta Ratnākara which

1. क्रियाविशेषजन्यो यस्तद्धर्मो गमको भवेत् ।
गमयन्ति हि तद्वक्तिं तस्मात्ते गमका मताः ॥ —श्रीनिवासपण्डितः

is the equivalant of Mudrā has the same quality as the tone of humphita.

Hṛdayanārāyaṇa in his Hṛdayaprakāśa gives the same definition of gamaka as Śrīnivāsa Paṇḍita and refers the reader to other (standard) works for information about 'Humphita', etc.

King Tuḷajā's Saṅgīta Sārāmṛta has an intimate bearing on the practice of the present day. He gives the usual definition of gamaka and also repeats Pārśvadeva's definition. He freely paraphrases the definitions of the Ratnākara, generally explaining them and sometimes improving on them. He repeats after Veṅkaṭamakhin that the 15 gamakas are defined according to their treatment by Bharata and others. He says that Ḍhāla is mistaken popularly for Tirapa, and that this is a fallacy because Ḍhāla has been defined by pūrvācāryas as the throbbing movement like that of a pearl. His definitions of Kampita, Līna, Vali, Tribhinna, Kurula, etc., are similar to Śārṅgadeva's. He defines nāmita as a gamaka descending down into the Mandra. He deals with Sthāyavāgas after the manner of Śārṅgadeva. He gives 10 Asaṅkīrṇas, 33 Saṅkīrṇas and adds that in the same way other sthāyas have been defined by Bharata and others and that these are not dealt with by him for the sake of brevity. He follows the Ratnākara closely.

Coming to treatises of the present day we have a few standard works written in Sanskrit as well as in the vernaculars. These derive their authority from ancient works, tradition as well as practice. Among them, the following are important.

Kāśināṭha (a North Indian writer) in his Saṅgīta Sudhākara enumerates only 10 varieties of gamakas, *viz.*, Tirupa, Sphurita, Līna, Andolita, Vali, Ahata, Ullāsita, Humphita, Gharṣaṇa and Miśrita. All are defined according to the Ratnākara except Gharṣaṇa which is

described as the production of several notes by one single gentle stroke. Miśra is a variety got by admixture.

Viṣṇu Śarmā (North Indian) in his Abhinavarāga-mañjari gives the definitions of both Śārṅgadeva and Pārśvadeva. He however says that the gamakas have been stated by Bharata and others to be 15.

The Catvāriṁśacchata Rāga Nirūpaṇa (attributed to Nārada but which appears to be modern work) mentions the traditional varieties of 15 gamakas.

In the Saṅgīta Kaumudi (South Indian, written in Sanskrit, 20th century) 10 different kinds of gamakas only are described[1] and a large number of vernacular texts follows this classification. The gamakas are:—

(1) Ārohaṇa, which is a grace embracing notes in ascent.
(2) Avarohaṇa covers descent.
(3) Ḍhālu, e.g., sp, sm, sg, etc.
(4) Sphurita proceeds in the order sr, rg, gm, mp, etc.
(5) Kampita is like ppppp, mmmmm, etc.
(6) Āhata progresses like ss, rr, gg, mm, etc.
(7) Pratyāhata like ss, nn, dd, etc.
(8) Tripuccha consists of graces like sss, rrr, ggg, etc.
(9) Āndolita proceeds like srs Dd, srs Pp, etc.
(10) Mūrchanā consists of uses like srgmpdn, rgmpdns and so on.

(These are noticed by Mr. K. V. Srinivasa Aiyangar in his Gānabhāskara where he points out that ārohaṇa, avarohaṇa and

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1. आजनेय उवाच—
ब्रह्मपुत्र महाप्राज्ञ यथोक्तं हरिणा पुरा ।
दशानां गमकानां हि लक्षणं शृणु तत्त्वतः ॥
आरोहश्चावरोहश्च ढालुस्फुरितकम्पिताः ।
आहतप्रत्याहते च त्रिपुच्छान्दोळमूर्छनाः ॥ इत्यादि ॥ —संगीतकौमुदी ।

mūrchanā are not gamakas since they lack 'kampa', *i.e.*, are not shaken).

In the Saṅgīta Kalānidhi, Taccūr Singrachari and his brother give the same 10 varieties of gamakas as the Saṅgīta Kaumudī, with the same definitions. (These 10 gamakas are defined identically in "Saṅgīta Vidyā Darpaṇam' by V. Naidu, in "Samgītamṛtanidhi' by M. Pillai, and in 'Bharata Saṅgīta Prabodhinī' by Johannes, all publications in the vernacular.)

In the Gānabhāskara Mr. K. V. Srinivasa Aiyangar defines the 15 gamakas given by Śārṅgadeva in the light of modern practice. From this point of view they are important. Tirupa according to him stops at a note, presses it down and reveals the colour of the next note. In Kampita the note is moved without bringing in the colour of neighbouring notes. In Sphurita a note is repeated, and in the repetition the lower note is faintly heard. Līna stops at a note and merges the sound into that of its neighbour. Āndolita stops at a note for four or five Akṣarakālas, pulls the note straight and reveals the next note faintly. Vali is got by pulling the wire at a note and producing the next notes. Tribhinna is produced by placing the finger at the same time on three strings (of the Vīṇā) and sounding three notes. This is common on the Vīṇā. In Kurula from a note another is produced with force; ND, PM, is played N, sD, nP, dM. Kurula also means the production of 2 or more notes by one stroke from one note. Āhata is called ravajāti; when descending from one note to another if the next note is subtly revealed it is Āhata. Ullāsita is zāru; it is of 2 kinds, *viz.*, ekkuzāru and diguzāru. This consists of gliding over intermediate notes when going up or down from one note to another. Plāvita halts at a note for the period of a few mātrās and brings out the colour of the neighbouring notes. Gumphita is also called Humphita, producing the sound 'hum'. Mudrita is defined as the sound produced by closing the

mouth. Nāmita is got when the notes are moved in such a way that their tone is diminished and made subtle.

Mr. Subbarāma Dīkṣitar in his Saṅgīta Sampradāya Pradarśinī deals with the 15 gamakas of the Ratnākara with exhaustive reference to the technique of the playing on the vīṇā. He considers that Līna, Āndolita and Plāvita are only varieties of Kampita. Under Sphurita he brings Pratyāhata. Under Āhata he gives Ravai and Khandipu. Vali, according to him, can be applied to one, two or three notes. Under Ullāsita he mentions ascending and descending Zārus. Under Kurula he mentions 2 varieties, *viz.*, odigimpu and orika. Tribhinna is explained solely with reference to the Vīṇā. Taking the whole of his explanation into account, we find that the definitions do not agree entirely with the definitions of the Ratnākara in all cases. In many cases we find the definitions are extensions of the original meaning of the terms and have reference to the Vīṇā. Mr. Dīkṣitar's definitions and the definitions by others based on his may find support from prevalent usage and tradition pertaining to Vīṇā-playing. In this connection we have to note that in the Vādyādhyāya, Śārṅgadeva elaborately deals with the various methods of playing on the Vīṇā, which according to him can be considered alaṅkāras. Similar to these are the gamakas of the Vīṇā mentioned in the ancient Tamil treatise Piṅgaḷa Nighaṇṭu which are as follows:—

Kalittal, Śummai, Kambalai, Aḻuṅgal, Śilaittal, Tuvaittal, Śilambal, Iraṅgal, Imiḻdal, Vimmal, Irattal, Ēṅgal, Kaṉaittal, Taḻaṅgal, Karaṅgal, Araṟal and Iśaittal.

These are called the several qualities of tone got on the wire of the lute and are remarkable for their variety. Otherwise the gamakas are not explained in the available Saṅgīta literature in Tamil. The 5 Jātis into which the 22 Śrutis have been divided also bear names like Dīptā (*i.e.*, illumined), etc., which seem to have some affinity with those of the above list.

The gamaka has come to occupy a vital place in our system of music. It is not simply a device to make melodic music tolerable, and it is not its function merely to beautify music. It determines the character of each rāga, and it is essential to note that the same variety of gamaka appears with different intensity in different rāgas. The function of the same gamaka in different rāgas varies subtly and establishes all the fine distinctions between kindred melodies by an insistence, which is delicate but withal emphatic, on the individuality of their constituent notes. The gamaka makes possible the employment of all the niceties in variation of the pitch of the notes used and is therefore of fundamental importance to our music. If the personality of any rāga is to be understood it cannot be without appraising the values of the gamakas which constitute it.

CHAPTER VI.

The meaning of the rāgas.

Theorists from the earliest times have attempted to analyse the significance of the different notes as they occur in a piece of music which aims at the expression of some mood or emotion. From the time of Bharata not only a melody type or rāga but every note of the scale was assigned a particular rasa which it was supposed to represent. This has been condemned by some modern critics who however have not taken into account the views of such distinguished authorities like Helmholtz, Curwen, etc., who have not hesitated to define the emotional significance of individual notes. It need not be gainsaid that every note has in it the power of expressing some emotion or other. Mr. Swarup in his "Theory of Indian Music" has interpreted the moods expressed by the 22 śrutis, but his interpretation is of doubtful value since it is based on the etymological significance of the names of the śrutis. The forms ascribed to the rāgas and rāgiṇīs in old works are mostly based upon the sentiments which are expressed by the names of those melodies. Bharata and Śārṅgadeva very elaborately deal with the Rasas of the Jātis and Rāgas and lay down rules as to when they should be used on the stage. The allocation of the different hours of the day and of the seasons to the singing of the different rāgas seems to be primarily based upon the emotional significance of the particular rāgas. For instance, if a rāga is sung at dawn or at dead of night its significance is best brought out as opposed to the effect produced by its rendering at some other time of the day. A modern example can be cited. The rāga Bhūpāla produces a very pathetic effect if it is sung before sunrise and it is not so well suited to any other hour of the

day. This fact has been recognised by even Śrī Tyāgarāja who has composed a song in this rāga invoking the Deity to awake from sleep. But it must be understood that a rāga cannot be labelled as expressing one particular rasa alone. The power of a rāga to express different complex emotions is brought out in the compositions of Tyāgarāja and others. The same rāga is employed in the rendering of different rasas by Tyāgarāja. In the Rāma Nāṭaka of Aruṇācala Kavirāya, Madhyamāvatī is employed to express anger, joy and also the narration of the rout of Rāvaṇa's forces. To express grief through lamentation such different rāgas as Ānandabhairavī, Kāmbodi, Āhiri, and Bhūpāla, are used. Such examples are innumerable and can be quoted by reference to the works of Gopālakṛṣṇa Bhārati, Kavikuñjara Bhārati, Śrī Nārāyaṇa Tīrtha, etc., whose works are operatic in form and hence afford valuable material for study in this connection. The nature of emotional experience should be correctly understood in order to appreciate its expression through a rāga. Mr. F. Howes says that emotion is rarely experienced pure (*i.e.*, as pure fear, pure anger, etc.). "The complexity of the experience of the civilised adult is such that he rarely experiences any of these crude (primary) emotions in a pure form. Far more frequently two or more emotions are aroused simultaneosuly and blend to form secondary and tertiary emotions. These primary and derived emotions are blended with one another and modified in a hundred ways. Sometimes, an instinct may be aroused pure but more frequently our feelings are blends of several instinctive emotions." The rāga has in it the power of expressing all this complexity of emotional experience. It is wrong to say that a rāga possesses only one psychological property. An infinite variation in the expressive power of a rāga can be effected by the use of suitable gamakas, adequate intonation, emphasis and rhythm. Allied to this topic is the genetic theory of the rāga, advanced (*vide* The Hindu,

December, 14, 1934) by Dr. R. Vaidyanathaswami, Reader in Mathematics, The University of Madras. He says that the rāga must be looked upon as 'a form created by a psychic movement of self-expression and moulded into shape by the operation of inevitable aesthetic laws'. He calls this the genetic theory of the rāga. His view is that the 'rāga may be considered as the complete musical expression of a single definite mood or as the total musical functioning of a definite mental being'. We are not here concerned with the other aspects of the theory. But it seems that the mood of the rāga is more easily understood than expressed. Music expresses through suggestion, and not through direct speech. The rāgas are eloquent vehicles of emotion with a limitless but inarticulate power of expression. A genius bends them to his purpose and makes them carry his message.

CHAPTER VII.

The Analysis of Rāgas.

Prefatory note.—The aim of this chapter is to define the lakṣaṇa, as embodied in standard compositions and texts, of the most popular among the rāgas that have been recognised as belonging to the system of Karnātic Music. Among the authorities Veṅkaṭamakhin and Govinda (the author of the Saṅgīta Śāstra Saṁkṣepa which may be said to represent the school of Tyāgarāja) are taken to be the foremost. The evidence of compositions is treated as a fundamental factor in the definition of the lakṣaṇas. Among the thousands of rāgas that are obtained as a result of permutation in the Meḷakartā scales, only those that are well-known and seem to be specially important from the points of view of different authorities and are embodied at least in Gītas are considered here. This allows room for the inclusion of new rāgas on similar lines when they are popularised by composers and artists, and since there is practically no limit set to the use of such new material, no list of rāgas and their lakṣaṇas can be final. So at any period of time when the lakṣaṇa of rāgas is sought to be defined, nothing more can be attempted than the understanding of the laws that govern them. This may be helpful in preserving their forms and protecting them from Deśī encroachment.

The aṁśa, graha and nyāsa alone are mentioned in most of the lakṣaṇagītas and ślokas. But they lack an air of reality, because in almost every case one single note, *viz.*, Sa is given as representing all the three. As regards the Aṁśa, as has been pointed out already, one note is not always sufficient to represent the character of a rāga; only

a group of notes is able to do so in almost every case. Hence it seems advisable to take the Aṁśa as indicating a characteristic phrase. (Kallinātha has admitted this interpretation in his commentary). The Aṁśa is also given as a single note whenever textual authority and practice warrant such usage. The Graha is, according to modern practice, usually any note of the ārohaṇa or the avarohaṇa of a rāga. The Nyāsa is always the Ṣaḍja. No distinction is now made between Apanyāsa, Sannyāsa or Vinyāsa. These were distinguished in Grāma music; for instance, Sannyāsa was the final of the first Vidārī, but in modern practice, practically no difference is made between the first and subsequent vidārīs, so far as the rules of their structure go. Hence all these terms mean only the notes on which intermediate phrases in a song end, and these can be any one of the ārohaṇa or avarohaṇa. Bahutva and alpatva play a vital part in current music and Bahutva and alpatva play a vital part in current music and Mandra limits are also significant and a number of rāgas are assigned a definitely fixed range within the madhya and mandra octaves, *e.g.*, Kurañji, Punnāgavarāḷī, etc. Ṣāḍava and auḍava are constituted freely in accordance with the spirit of the rāga; so also antaramārga, which has lost its old significance as applied to grāma music.

A list of the abbreviations of the names of authorities quoted is given below:—

V.—Veṅkaṭamakhin. Mr. Subbarāma Dīkṣitar (SD) has admirably explained his lakṣaṇas in the Saṅgīta Sampradāya Pradarśinī.

G.—Govinda, the author of the Saṅgīta Śāstra Saṁkṣepa, (The gītas attributed to him are also included in this group).

T.—Tuḷajā (For many of the rāgas he gives the equivalents in grāma music.)

GD.—Govinda Dīkṣita.

A.—Ahobala (Many of his definitions agree with current usage.)

RL.—Rāga Lakṣaṇa (from a manuscript of Tanjore, Published in Poona.)

SK.—Saṅgīta Kaumudī (A work in Sanskrit, of recent composition, dealing exhaustively with rāga-lakṣaṇas. Hanumān is made the exponent.)

RV.—Rāga Varṇa Nirūpaṇam (A fragmentary copy in the Madras G. O. Mss. Library. The Sañcārīs given are classical.)

SV.—Saṅgīta Viṣaya (A fragmentary copy found in the G. O. Mss. Library, Madras.).

RS.—Rāga Sāgara (Ditto).
RP.—Rāga Pradīpa (Ditto).

The vibrational values of the notes as they occur in the different rāgas are given under each heading. The figures are based on the prayogas of the standard compositions, and were derived by observations on the sonometer. Every care has been taken to render them as accurate as possible having in view the capacity of the instrument.

The names of the 7 notes are denoted by their initial letters; a capital letter is assumed to indicate a long svara. The number of the vibrations of the svaras noted are given with reference to the keynote Sa=256 vibrations per second. It must be remembered that often when a note ascends to another which is situated higher, its śruti value is slightly increased, and when it descends to a lower note this value is slightly decreased; and also that frequently in a slow 'Varek' proyaga covering two notes (which are consecutive or otherwise) the second note is not completely reached (*vide* Chapter II, Svaras and Śrutis).

The meḷakartā rāgas are given their current names and are reckoned by their serial numbers. Under each of them, the name given by Veṅkaṭamakhin is also noted. The Graha, Aṁśa and Nyāsa are Sa except where otherwise stated.

Pūrṇa or 'Sampūrṇa' means regular; 'Vakra' is irregular; 'Varjasvara' is an omitted note.

In giving the number of vibrations of svaras, three kinds of values are usually given, *viz.*:

(*i*) Number of vibrations of the svara in its usual form.

(*ii*) Number of vibrations of the svara when it deviates from its usual form in ascent or descent.

(*iii*) Number of vibrations of the svara in Kampita.

This Kampita is assumed to represent the simplest form of the gamaka applied to a note, *i.e.*, the note is shaken in a leisurely and prolonged manner without touching either of its adjoining notes. With this gamaka the maximum period of pause is possible on a note. As contrasted with this gamaka is its variety which touches or seems to touch the adjoining note.

Sa and Pa being of fixed value, vibration numbers are given only for the remaining notes. Ma is evaluated only wherever necessary, for similar reasons.

No. (1) *KANAKAṄGI.*

Veṅkaṭamakhin gives the name Kanakāmbarī for this rāga. According to him the G and N are omitted in ascent. N is Vakra. Under this definition of the rāga he describes Mukhāri as also omitting G and N in ascent; he states that it is Sampūrṇa and consists of Śuddha Svaras. He describes Mukhāri Meḷa as one of the 19 popular Meḷas of his time, and identifies it with the Śuddha scale of Bharata and Śārṅgadeva. Accordingly, S, M and

P, are of four śrutis, N and G of two śrutis, and R and D of three śrutis. This establishes the fact that the original Śuddha Svaras of the Sanskrit texts are still alive in the Śuddha scale of Karnātic music.

Govinda in his Saṅgīta Śāstra Saṅkṣepa gives a somewhat different definition. He describes Kanakāṅgī as consisting of the seven Śuddha Svaras which are Pūrṇa in ascent and descent. This qualification is common to all his definitions of Meḷakartās. But like Veṅkaṭamakhin he makes the Āroha of Kanakāṅgī Vakra-Sampūrṇa namely S G R G M P D N D S. The avaroha is Pūrṇa. In the gīta, however, both the āroha and avaroha are called Sampūrṇa. (This prayoga seems to be supported by the evidence of Tyāgarāja's songs in similar scales). This scale is called in the gīta 'Meḷādhikāra Kanakāṅgī'. This name is repeated in S.V., and in R.L. In them, excepting omissions, the names by which the meḷas are well-known are given. All the modern names of the 72 scales are mentioned in the Drupadas attributed to Bijou Naick.

(It may be pointed out that Govinda uses Veṅkaṭamakhin's names of Meḷakartā but in the body of the lakṣaṇa ślokas gives the popular names as opposed to Veṅkaṭamakhin's. But Veṅkaṭamakhin's names are given in a corrupted form, *e.g.,* Enadyuti for Phenadyuti, Rūpyanaga for Rūpāvati, Vasantabhairavī for Vātīvasantabhairavī, etc. Thus Veṅkaṭamakhin's names as reproduced by Govinda often lack their mnemonic syllables.)

In its unalloyed (Śuddha) form Kanakāṅgī takes the following values:—S=1, R=10|9, G=75|64, M=4|3 P=3|2, D=5|3, N=225|128, S (Octave)=2. These represent the śrutis in terms of intervals which are well-known at present, and also other intervals derived from these. The ratios, if strictly based on the values of Śuddha Svaras, would be:—

Sa=1, R=25|22, G=27|22, M=31|22, P=35|22, D=19|11, N=20|11, and Sa (Octave)=2. (These Svaras do not seem to differ from those employed in the chant of the three Vedas). This easily shows that the identification of Catuśśruti R with Śuddha Ga and Catuśśruti D with Śuddha N is not quite correct (*vide* Chapter II, Śrutis and Svaras), because the values of these notes fluctuate round the absolute values assigned to them, though in some phrases the above identification occasionally holds good. Sometimes R=16|15 or 256|243 and D=8|5 or 128|81.

The number of vibrations of the Svaras of the scale are:—

S.		R.	G.	M.	P.	D.	N.	S.
I.	256	284·4	300	341·3	384	426·7	450	512
II.		273·6	287·9			409·6	432	
		269·7				404·4		
III.		273·6	287·9	341·3		409·6	455	
		to	to	to		to	to	
		287·9	300	345·6		432	460·7	
IV.		284·3	307	352·6		432·1	454.	

Group IV indicates the vibrational values of the Svaras produced in strict accordance with the Suddha Scale.

No. (2) RATNÂṄGÎ.

(*a*) Sampūrṇa in ascent and descent; Meḷādhikāra—G.

do. do. do. —RL and SK.

This is called 'Phenadyuti' by V who defines that in it Ga is omitted in ascent and ni is vakra.

(*b*)	R.	G.	M.	D.	N
I.	Same as those for No. (1).				455·1
II.	do.		do.		460·7
III.	do.		do.		455·1 to 466·2

No. (3) *GĀNAMŪRTI.*

(*a*) Sampūrṇa in ascent and descent—G, RL and SK; called Gānasāma Varāḷī by V according to whom Sāma Varāḷī is sampūrṇa. (But in his gītas generally the notes supposed to be affected by Vivādidoṣa are given Varja-Vakra treatment.)

(*b*)

R. G. M. D.		N.
	I.	479·9
Same as those for No. (1).	II.	486·0
	III.	479·9 to 491·5

No. (4) *VANASPATI.*

(a) Sampūrṇa in ascent and descent—G, RL and SK. Named 'Bhānumati'; Sampūrṇa—V.

(*b*)

R. G. M.		D.	N.
	I.	426·7	455·1
Same as No. 1.	II.	432·0	460·7
	III.	426·7 to 435·5	455 to 469·3

No. (5) *MANAVATI.*

(*a*) Sampūrṇa in ascent and descent—G, RL and SK.

Named 'Manorañjanī', sampūrṇa; Ga is vakra in ascent.—V.

(*b*)

R. G. M. and D.		N.
	I.	479·9
Same as for No. (4).	II.	486
	III.	479·9 to 491·5

No. (6) *TANARŪPI.*

(*a*) Sampūrṇa in ascent and descent—G, RL and SK.

Named 'Tanukīrti'; D is vakra in descent.—V.

(*b*)	R.	G.	M.	D.	N.
				I. 455·1	
	Same as for No. (5)				Same as for No. 3.
				II. 460·7	
				466·2	
				III. 455 to 486.	

No. (7) *SENAVATI.*

(*a*) Sampūrṇa—G, RL and SK.
'Senāgraṇī'; Ma and Dha are vakra—V.

(*b*)	R.	G.	M.	D.	N.
I.	273	303·3	341·4	409·6	
					Same as for No. (1).
II.	269·7	307·2		404·4	
	284·4	312·9		426·7	
III.	269·7	297·5	341·4	409·6	
	to	to	to	to	
	284·4	307 2	349	422.	

No. (8) *HANUMATTOḌI.*

(*a*) Sampūrṇa—G, RL and SK.

'Janatoḍi'; defined as Toḍi, pūrṇa, sung in the evening. V has Komala Ri and Dha; Nyāsa is Dha and aṁśa Ga—A. Under this meḷa 'Śuddha Toḍi' which omits Pa in ascent and descent is given as a janya by G; A's 'Mārga Toḍi' and RL's Toḍi are the same. Now practically no distinction is made between the two varieties of 'Toḍi'. In the sañcārī given in RV, Pa is very sparingly used.

(*b*)	R.	G.	M.	D.	N.
I.	273	303·3	341·4	409·6	455·1
II.	266·7	307·2		404·4	460·7
	269·7	297·5		399·9	464·1
	284·4	312·9		398·5	459·1
					469·3
III.	269·7	303·3	341·4	409·6	455
	to	to	to	to	to
	287·9	330	345·6	444·6	469

JANYAS OF TOḌI (i) BHŪPĀLAM.

(*a*) s r g p d s—s d p g r s—G.

do. but assigned to Kartā No. (9)—V.

Omits ma and pa, and belongs to Bhairavi meḷa—G.D. R and L are Komala; g is aṁśa. Sañcārī: g p d s r g r s s d p g p g r g r s d S etc.—A.

RL and SV agree with G.

(*b*)

	R.	G.	D.
I.	269·7	303·3	404·4
II.	273	307·2	409·6
		301·7	399·9
III.	269·7	303·3	404·4
	to	to	to
	287·9	310·7	426·7

(*ii*) *ĀSĀVERI.*

(*a*) g and n are omitted in ascent and the descent is regular.

s r m p d s—s n s p d m p r g a—G.

Born of 'Gauri' meḷa; in ascent g and n are omitted—A.

Derived from Toḍi Meḷa; in ascent g and n are omitted—RL.

Derived from Toḍi Meḷa.

s r m p d s—s n s p d p G r s—SK.

s r MP d S S n—d d P m g g r S—SV.

Omits g and r in ascent—V.

(*b*)

	R.	G.	M.	D.	N.
I.	273	303·3	341·4	409·6	460·7
II.	269·7	307·2		404·4	455·1
	284·4				
III.	273			409·6	455·1
	to			to	to
	278			449·3	469

(*iii*) *PUNNĀGAVARĀḶI.*

(*a*) Pūrṇa in ascent and descent; 'madhya rāga' meaning that the 'tāra' octave is not reached.

s r g m p d n—n d p m g r s n—G.

Its range is from mandraṣaḍja ni to the dha above—V.

'This is the embodiment of sound'; sampūrṇa in ascent and descent; N S R G m P P D—d p M G r s s N—SV.

RL and SK agree with G; RV gives a good sañcārī. The rāga assumes the Catuśśruti R in phrases like g r g m p.

(*b*)

	R.	G.	D.	N.
I.	269·7	303·3	404·4	455·1
II.	266·7	307·2	409·6	460·7
	273		426·7	
	284·4			
III.	266·7	303·3		
	to	to		
	284·4	310·		

(*iv*) *DHANYĀSI.*

(*a*) s g m p n s—S n d p m g r s—G and RL.

n s G m p N S—n d p m g r s; classed under the 20th Meḷakartā—V.

Omits r and d in ascent, and consists of śuddha svaras—A.

Belongs to 'Śrī rāga meḷa' and is bereft of r and d;

D is an auḍava. (This classification is akin to Veṅkaṭamakhin's)—G.D. Govinda Dīkṣita's definition is repeated by Tuḷajā.

The following sañcārī is given in R.V.—S n s—n n d n s n n d d p—n n s—n s g g r—S g r m g g r r s—n s g g m g m p—m p d—m d p d—m p m p—g m p n n d n d—p d d—m p p—etc.

(*b*)

	R.	G.	D.	N.
I.	273	307·2	409·6	460·7
II.	269·7	303·3	404·4	455·1
III.	266·7	307·2	399·9	455·1
	to	to	to	to
	273	317	409·6	464·1

(*v*) *AHIRI.*

(*a*) Sampūrṇa vakra in ascent and sampūrṇa in descent.

S r s g m p d n s—S n D p m g r s—G.

Classed under the 20th meḷa by V. The notes of the rāga are:

s r s g m p d n s—S n D p m G r s.

Govinda Dīkṣita's definition includes several of the rāga's current aspects. According to him, Sa, ma, pa and dha for this rāga are śuddha; ri is pañcaśruti; ni is kākalī; ga is sādhāraṇa.

According to Tuḷajā this is a Takka Bhāṣa, and derived from Bhairavi Meḷa; pūrṇa, to be sung in the evening; in the ascent and descent the notes occur in vakra combinations. He gives the sañcārī: M g r s—n s r r S—g g r g m p d d p p S—S n d d p—m p d p p m g r s n S etc.

RV gives: m p n s n s r—n s m g m p—g m n d p, etc.

RL agrees with G; SK classes the rāga under the 14th meḷa with the sañcāra:—S r s g m p d n s p n s—s n D p M g r s.

The current lakṣaṇa of the rāga includes all the features noted above; śuddha ri and dha, sādhāraṇa ga and ni predominate; sharp ri and dha, antara ga and kākalī ni are accidental notes.

(*b*)

	R.	G.	D.	N.
I.	273	307·2	409·6	460·7
II.	266·7	303·3	404·4	455·1
	269·7	320	426·7	479·9
	284·4	324	432	486
	287·9			
III.	269·7	307	409·6	460·7
	to	to	to	to
	287	322	435	479·

No. (9) *DHENUKA.*

(*a*) Meḷādhikāra and sampūrṇa—G; called Dhuni bhinna ṣaḍja by V.

(*b*)	R.	G.	D.	N.
I.	269·7	303·3	404·4	486
II.	280	311·1	409·6	479·9
III.	269·7	303·3	404·4	479·9
	to	to	to	to
	273	320	426	491

JANYA (*i*) *TAKKA.*

(*a*) Ri is varja-vakra in ascent; s g m p m d n s—S n d p m g r s—G and RL.

Assigned to the 15th meḷa by V who defines it as omitting ri in ascent, and ni in descent, with a meagre use of pa in both. Its sañrāra is given by Mr. Subbarāma Dīkṣitar as S g m d d n d S or S g m p m g m d n s—S d m g r g s or S n d m p m g m r g s.

R and D are komal; D is omitted in āroha—A. 15th meḷa; p is meagrely used; in ascent and descent distant notes are combined; sañcārī:—M g m r r g m d d N S—n d m m r g r r g m S—s m p n g s m etc.—T.

(*b*)	R.	G.	D.	N.
I.	269·7	303·3	404·4	455.1
II.	273	307·2	409·6	460·7
III.	266·7	303	399·9	455
	to	to	to	to
	280	311	409·6	464

No. (10) *NĀṬAKA PRIYA.*

(*a*) Sampūrṇa—G, RL and RS; Called 'Naṭābharaṇam' by V who says ri is omitted in ascent and Dha is vakra in ascent and descent; SD's sañcāra is given as 's g m P n d n s S—S n d n P n p m g g r r s'.

(*b*)	R. and G.	D.	N.
	Same as for No. (7).	I. 426·7	455·1
		II. 432	460·7
		III. 426·7	455·1
		to	to
		455	469

No. (11) *KOKILAPRIYA.*

(*a*) 'Sampūrṇa'—G and RL; according to V, ga is omitted in ascent.

(*b*)	R.	G. and D.	NI.
	Same as for No. (10)		I. 486

No. (12) *RŪPACATI.*

(*a*) 'Sampūrṇa'—G; according to V, ga dha and ni are successively omitted in ascent, and dha is vakra in descent.

(*b*)	R.	G. and N.	D.
	Same as for No. (11)		I. 455·1
			II. 460·7
			435·5
			440

No. (13) *GĀYAKAPRIYA.*

(*a*) 'Sampūrṇa—G; V calls this 'Hejjajji' rāga, which omits ni in ascent. His name for the scale is Geya-Hejjajji.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	450
II.				449·4 & 436·8

JANYAS:

(*i*) *HEJJUJJI* (*a*) omits n in ascent—G, RL & SV. GD describes this as a meḷa with antarāga and the rest śuddha svaras; Tuḷajā gives the same lakṣaṇa and observes that from this meḷa 'Hejjajji' and other rāgas originate. He gives the phrase D n d d p m—g m p d D S.

(*b*) Svara values same as for No. (13).

(*ii*) *JUJAVAḶI.*

(*a*) Ri is varja-vakra. Sañcāra: s m g m p d n s—s d n d p m g s—G; RL names it Jujāhuḷi or Sujaskāvali with the same sañcāra with descent as s n d p m g r g s; SV gives the Sañcāra: s M g M p D n s—d N d p p M g S, naming it Jujāhuri.

(*b*) Svara values same as for No. (13).

N.

III. 450 to 455·1.

(*iii*) *KALGAḌA.*

(*a*) s r g p d n s—s n d p g r s—G. SV gives the sañcāra: S r G p p D N S—S n D P p G R S; it is named Kalaṅgaḍā in RL.

(*b*) Svara values same as for No. (13).

No. (14) *VAKULĀBHARAṆAM.*

(*a*) Sampūrṇa—G, RL, and RS; V gives the meḷa the name 'Vaṭī Vasanta Bhairavī' and adds that 'Vasanta Bhairavī' uses pa sparingly. Tuḷajā gives the same description under the name Vasanta Bhairavī, and adds that in ascent the phrase s r g m does not occur and in descent pa is omitted.

(*b*)

R. G. and D.	N.	
Same as for No. (13).	I.	455·1
	II.	460·7
		474·
	III.	455·1 to 469.

No. (15) *MAYŪRAMĀḶAVAGAUḌA.*

(*a*) Sampūrṇa according to G, RL and SK. V gives the same lakṣaṇa. Tuḷajā repeats it but adds that in ascending from madhya to tāra ṣaḍja ga and ni do not occur regularly, *e.g.*, d s s r—s r m g r—m p d s S etc.

(*b*)

	R.	G.	D.	N.
I.	273	320	409·6	479·9
II.	269·7	324	399·9	486
	284·4	..	404·4	491·5
	..	..	426·7	497·6
III.	266·7	320	404·4	479
	to	to	to	to
	284	337·	426	486

JANYA RAGAS.

(*i*) *SAVERI.*

(*a*) s r m p d s—s n d p m g r s—G, RL, SK; Veṅkaṭamakhin defines this as pūrṇa, ga and ni being omitted in ascent, and sometimes used as triśruti notes (which is

still true); classed under 'Gurjari meḷa' as an auḍuva by omitting ga and ri—GD; T agrees with V; RV gives the phrases:—d n d p d—r s r g s r s—r g s r m g r—S g r g p d n d p n d etc.; A omits ni altogether, but otherwise agrees with G.

(*b*)	R.	G.	D.	N.
I.	273	320	426·7	479·9
II.	266·7	307·2	399·9	486
	269·7	324	409·6	406
	284·4	..	404·4	..
III.	269·7	320	404·4	460
	to	to	to	to
	273	324	426	479

(*ii*) *GAUḶA.*

(*a*) D is varjavakra in ascent and descent; s r g m r m p n s—s n p m g m r s—G and SK; RL gives s r m p n s for ascent; V says it is ṣāḍava by omitting D, and uses G irregularly:—s r m p n s—s n p m r g m r s; A says it omits G and D; GD says it is ṣāḍava by omitting dha and has for aṁśa ni and ri; Tuḷajā's treatment of ga is significant and illustrated in the sañcārī: r m P n s r g m r r s s n p—p m r s—S R G M R R S etc.

(*b*)	R.	G.	N.
I.	266·7	320	479·9
II.	269·7	324	486
	273	..	..
III.	266·7	..	479·9
	to		to
	273		491·5

(*iii*) *BAUḶI.*

(*a*) S r g p d s—s n d p g r s—G, RL and SK; V defines it as omitting ma, and without ni in ascent. SD says that ni is sparingly used in ascent; according to GD ni is omitted but ma is aṁśa; Tuḷajā calls it Bahuḷī and defines it as Ṣāḍava by omitting ma: the phrase p d n s in ascent is rare according to him.

(*b*)	R.	G.	D.	N.
I.	269·7	320	409·6	479·9
II.	273	324	..	..

III.	269·7	320	409·6
	to	to	to
	273	330	426

(*iv*) *NĀDANĀMAKRIYĀ.*

(*a*) Sampūrṇa in āroha and avaroha. 'Madhya rāga'. Sañcāra: S r g m p d n—n d p m g r s N—G; RL defines it as sampūrṇa and vakra and gives the sañcāra:—S r g m p d p n s—n s n d p m g r s and an Āndhra reading: s r g m p d n—n d p m g r s n; V describes it as pūrṇa; it is adorned by m, and omits g in ascent according to Ahobala, who gives the phrases s M s r g m M g m p d n d d p m p m p MM—S r MM; Sampūrṇa, has antara ga and not sādhāraṇa ga—GD; in ārohaṇa and avaroha the mūrchanās are not irregular—T; V, T and GD call it Nādarāmakriyā.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479·9
II.	269·7	307·2	404·4	460·7
III.	269·7	320	409·9	479·9
	to	to	to	to
	273	324	426·7	491·5

(*v*) *MECABAULḶI.*

(*a*) s r g p d s—s n d p m g r s—G. RL identifies this with the Āndhra reading, and in an alternative reading includes ni in ascent; sampūrṇa and without ma and ni—V. T calls it pūrṇa and gives the phrases: r s d r s—d s r G—r g d d p p m m g g p d S—n d p M p d n d p m g r S r s n.

(*b*) R. G. D. N.

Their values are the same as No. (15).

(*vi*) *REGUPTI.*

(*a*) S r g p d s—S d p g r s—G, and RL which calls it Revagupti; V gives the same definition; T says it is auḍava by omitting ma and ni.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479·9

(*vii*) *MALAHARI.*

(*a*) S r m p d s—s d p m g r s—G and RL and V; —do—in avaroha the flow of notes in complicated and dense T.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479·9

(*viii*) *MAṄGAḶAKAIŚIKA.*

(*a*) ri is varja vakra in ascent. Sañcāra: s m g m p m D n s—S n d p m g r s—G. RL gives S m g m p d n s in ascent.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479·9

(*ix*) *PAḌI.*

(*a*) s r m p n s—s n p d p m r s—G. RL names it also as Pahāḍi. V defines it as ṣāḍava, omitting ga and using dha irregularly; in ascent dha is leapt over—T;

(*b*)	R and	N.
I.	273	479·9

(*x*) *GAURI.*

(*a*) S r m p n s—s n d p m g r s—G. According to V cyutapañcama is also used. SD gives the sañcāra 'S r m p d n s—s n d p m p m g r s,' and remarks that cyutapañcama is used in descent.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479·9

(*xi*) *SINDHURĀMAKRIYĀ.*

(*a*) S g m p d n s—s n p d p m g s—G. (Under this name T defines an uttarāṅga meḷa).

(*b*)	G.	D.	N.
I.	320	409·6	479·9

(*xii*) *GAULIPANTU.*

(*a*) S r g r m p d p n s—s n d p m g r s—G and SK; V describes it as sampūrṇa, and without g and d in ascent; T says it is a Bottabhāṣā, Pūrṇa and in Āroha g and d are omitted and the descent is regular. RV gives the phrases:

D p n s r s—n s r g r s—n s r m g r s—r m p m d p m p—p m p d n d p—m p n s r—s r N d p p d M G r—DMG r—r r g r s.

(*b*)	R.	G.	M.	D.	N.
I.	273	320	341·4	409·6	479.9
II.	..	..	345·6	..	..

(*xiii*) *SAURĀṢṬRA.*

(*a*) S r g m p d n s—s n D p m g r s—G and RL. According to S. K. the sañcāra is 's r g m p D n s—s n d n d p m g r s'. V says that it is sampūrṇa and uses occasionally pañcaśruti dha, which is true to modern practice, which almost exclusively uses the sharp d; the Kaiśiki ni is an accidental note; RV gives the phrases: S g r s n s r s—n s d n s r—n d n s r s—S S d p m g r—p n d p m g r etc. T classes it under this meḷa and says the notes are regularly and irregularly applied. He gives the phrases: s r s n D p—p d p d n d p—p m G r g m P p etc.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479·9
	..	..	426·7	460·7

(*xiv*) *GURJARĪ.*

(*a*) s r g m p d n s—s d n p m g r s—G. According to V it is sampūrṇa and has ri for graha; T says it is pūrṇa with the phrases: r s n p—d s r s n s n s—r s n s—d s r s—r g P m g s—D n s d p M—p m g g r—r s n s S: Ahobala says 'Dakṣiṇa Gurjarī' omits m and n in avaroha, *e.g.*, g p d s r g r s d n d p d p g m g r S.

(*b*)	R.	G.	D.	N.
	273	320	409·6	479·9

(*xv*) *PARAJU.*

(*a*) Sampūrṇa according to G, V and RL. SK gives as sañcāra: S G m p d n s—s n d p m G r s.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479.9

(*xvi*) *PŪRVI.*

(*a*) s r g m p d n d s—s n d p m d m g r s—G. V calls it sampūrṇa. RL calls it pūrṇa but gives an Āndhra

reading which agrees with G's. Tuḷajā gives the phrases: S g r g m p d N d d p S—s n d p m g p m g G r s.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479·9

(*xvii*) *VASANTAM.*

(*a*) s g m d n s—s n d m g r s—G. V says it is sampūrṇa with vakra ga in ascent, r being varja: it takes the cyutapañcama. In present practice, this rāga uses sharp d more often than the flat.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479·9
	..	..	432	..

(*xviii*) *LALITA.*

(*a*) Omits pa—V. Ahobala gives the same lakṣaṇa and gives the phrases: s r g m d n s s n d m—g r s r s n s n d n n s r g m g r s n s etc.; GD gives the same lakṣaṇa; Tuḷajā says it is a Takkabhāṣā. He gives the phrases: n s r m g r—r s n s n s n d—m d n s r—r m m d—m d n S n d n d m m g r r S etc.; Tyāgarāja's song beginning with the word 'Sītamma' has been traditionally handed down as composed in Lalita with the sañcāra 's m g m d n s—s n d m g r s', using sharp dha.

(*b*)	R.	G.	D.	N.
I.	273	320	409·6	479·9
	..	..	432	..

No. (16) *CHAKRAVAKAM.*

(*a*) Sampūrṇa—G, RL, SK and RS. V gives the name 'Toya Vega Vāhinī'. According to him 'Vega Vāhinī' is Sampūrṇa.

(*b*)	R.	G.	D.	N.
I.	273	320	432	455·1
II.	269·7	324	426·7	460·7

No. (17) *SŪRYAKANTAM.*

(*a*) Sampūrṇa—G, RL, SK and RS. V gives it the name 'Chāyāvatī; and says it omits Pa in āroha.

(*b*)	R.	G.	D.	N.
I.	Same as for No. (16).			479·9
II.				486

JANYA RĀGA. BHAIRAVAM.

(*a*) s r g m p d n s—s d p m g r s—G. RL says it is vakra pūrṇa in descent. V calls it pūrṇa and assigns it to the 16th meḷa; Subbarāma Dīkṣitar gives it the sañcāra:—s r g m p d n s—s d p m p m g r s.

(*b*) Svara values same as for No. (17).

No. (18) *HĀṬAKĀMBARI.*

(*a*) Sampūrṇa—G, RL, SK and RS. V calls it 'Jaya Śuddha Māḷavi', pūrṇa using vakra dhaivata.

(*b*)	R.	G and Ni.	Dha.
I.	Same as for No. (17)		455
II.			440

No. (19) *JHAṄKĀRA DHVANI.*

(*a*) Sampūrṇa—G, RL, SK and RS. According to V, its name is 'Jhaṅkāra Bhramari' and ni is omitted in ascent.

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	409·6	450
II.				436·8

No. (20) *NĀṬABHAIRAVI.*

(*a*) Sampūrṇa—G, RL, SK, RS and RP. V calls it 'Nārī Rītigauḷa'; according to him Rītigauḷa omits dha in ascent. S. Dīkṣitar gives the sañcāra s r g m p d p n s—s n d m g r s; Tuḷajā defines the Bhairavi meḷa with śuddha m and d, sādhāraṇa ga, Kaiśiki ni and pañcaśruti dha. This is to be noted, *cf.* V. Govinda Dīkṣita also similarly defines the Bhairavi meḷa.

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	404·4	455·1
II.	..	..	409·6	..

JANYA RĀGAS.

(*i*) *BHAIRAVI.*

(*a*) G defines it as 'pavarja vakra' in ascent and 'pavarja' in descent:—s r g m n d n s—s n d m g r s. According to RL, it is sampūrṇa in ascent and omits pa in

descent. According to SK it is sampūrṇa. V defines it as sampūrṇa and as taking pañcaśruti dha occasionally. According to RP it is sampūrṇa. A assigns it only flat dha, with the phrases:—s r g m p d n—s n d p m g r s —s g m g m g m p m g r s. T says it is Upāṅga, named 'Bhairavī': Dha is aṁśa: Sampūrṇa with the phrases:— g r s—s r s n n d—p d n d p m—p d n s—n s g m g m— g m n n d n—p d n—s n n s. Present practice assigns it sharp and flat dha.

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	404·4 432	455·1
II.	284·4 291·6	303·3	409·6 426·7 436·8	449·4 460·7
III.	287·9 to 300	307·2 to 317·7	404·4 to 419 432 to 449	455·1 to 374

(*ii*) *RITIGAUḶA.*

(*a*) 'Sampūrṇavakra' in ascent and descent: s g r g m n d m p n s—s n d m p d m g r s—G. According to RL it is pūrṇavakra in ascent and pa is omitted in descent: S g r g m p m n d n s—s n p m g r s. SK defines it as S g r g m n s—s n d m p m g r s. According to GD, n is aṁśa, and the rāga is pūrṇa. Tuḷajā says that in descent r is omitted and mūrchanās ending in pa are many. In descending from s to p, d is omitted. He gives the phrases:— g m g r G r s—g m n d m N N—d m G r—n n n—g r s etc. Dha flat and sharp are used.

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	404·4 432	455·1

(*iii*) *JAYANTAŚRI.*

(*a*) s g m d n s—s n d m p m g s—G.

(*b*)	G.	D.	N.
I.	307·2	409·6	455·1

(*iv*) *HINDOḶAM.*

(*a*) R and P are varja and vakra is ascent: s m g m d n s—s n d m g s—G. RL defines it as S g m d n s—s n d m g s. V calls it auḍuva by the omission of ri and pa; ditto, A and GD.

(*b*)	G.	D.	N.
I.	307·2	426·7	455·1
II.	303·3	404·4	460·7

(*v*) *ĀBHERI.*

(*a*) S g m p n s—s n d p m g r s—G, RL, and SK. According to V it is pūrṇa and omits pa in ascent. SD gives it the sañcāra:—s m g m p s—s n d p m g r s. GD classes it under Āhari meḷa, which gives all the above notes. He calls it pūrṇa. Tuḷajā puts it under Bhairavi, and names it Pañcama Bhāṣā. He gives the phrases:—g m p s s—r s n s—n d p m g m—p s S M—m m g g s n S S—P m m g g s s—S m g m P s n n—s S n d p—m M m g r s; RP classes it under the same meḷa. Dha ♯ sharp is at present used, contradictory to lakṣaṇa.

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	409·6 432	455·1

(*vi*) *UDAYARAVI CANDRIKĀ.*

(*a*) S g m p n s—s n p m g s—G. V admits the sañcāra but places it under No. (9). Tuḷajā derives it from Nāṭameḷa with dha and ga omitted. He gives the phrases:—s n p—s n p m r p m—p s n s—r r p m p—s n n s etc.

(*b*) Svara values same as for No. (20).

(*vii*) *ĀNANDA BHAIRAVI.*

(*a*) G calls it sampūrṇa vakra in ascent and sampūrṇa in descent. According to V, ri is omitted and dha is vakra in ascent, and the rāga is sampūrṇa. RL defines it as S g m p n s—s n d p m g r s and also s g r g m p d p n s—s n d p m g r s. SK gives s g r g m p d p s for

ascent. A derives it from Bhairavī and gives:—n n s g G g r s r r s n s—n n m g g m m p m g g m g G g r s n N s M—D p m m p m g g m g G g g g G g r s n n s g g r s n n S S as sañcārī. Tuḷajā says that the ascent and descent of notes are not regular but complicated *e.g.*:—P d p m P m m g g r s n n s—g g s—P p S s—n n d—d p p m—m g g r s—n n s g G S etc. RP gives Dha as aṁśa and gives m p d P S n—d p M G r s n S etc. Antara ga Kākalī ni and sharp dha are admitted now as accidental notes.

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	409·6	460·7
		324	432	479·9

(*viii*) *DEVAKRIYĀ.*

(*a*) 'Madhyarāga'. Pa is varjavakra in ascent and dha is vakra in descent:—s r g m n d n—p d m g r s n—G. This sañcāra is called 'Āndhra' by RL, which gives also s r g m d n s—s n d m g r s. (V's Devakriyā corresponds to G's Śuddha sāveri) RP describes it as pūrṇavakra under No. (20) with dha for aṁśa. T agrees with V. Catuśśruti dha is also used.

(*b*) Svara values same as for No. (20).

(*ix*) *MĀÑJI.*

(*a*) Sampūrṇa—G and RL. SK defines it:—s r g m p n d n s—s n s p d p m g m r g s. V calls it sampūrṇa and SD defines it:—n s R g m p d n s—s n d p m g r s. Sharp dha is now used as an accidental.

(*b*) Svara values same as for Bhairavī.

(*x*) *NAYAKI.*

(*a*) Ga is 'Varjavakra' in āroha and sampūrṇa in descent:—s r g m p d N d p s—s N d p m G r s—G. RL calls it 'Āndhra' in form. V says it is sampūrṇa and sung according to practice and classes it under No. (22). Now the rāga adopts sharp dha only.

(*b*)	R.	G.	D.	N.
I.	287·9	303·3	432	455·1
II.	291·6	307·2	437·4	460·7
III.		303·3 to 311·1		432 to 455

(*xi*) *GHAṆṬĀRAVAM.*

(*a*) Sampūrṇa with dha for graha—V. SD says that this is traditionally called Ghaṇṭā and gives its mūrchanā as s g r g m p d p n d n s—s n d p m g r s. In this rāga, śuddha ri, sharp ri, flat and sharp dha occur. In current usage śuddha ri and śuddha dha predominate. RL under this meḷa gives the sañcāra:—s g r g m p n d n s—n s n d p m p m g r s. SK classes 'Ghaṇṭāravam' under No. (8) with the sañcāra:—s r g m p n s—s n d p m g r s; it adds the phrases S n D p d n s and G r g m p and calls the rāga 'saṅkrama'. A calls it Ghaṇṭā, assigns it komala dha, and gives the sañcārī:—g m p d n s—r s n s n d p m g m p d p m g m p m g r s s r s s n—g g g m p d p m g r s s r s n—g m p d n s n d p m p m p m g m g r g r s n—p d n S r s n S. RP classes 'Ghaṇṭā' under No. (20) and calls it sampūrṇa vakra in ārohaṇa and avarohaṇa. GD puts Ghaṇṭā under Śrīrāgameḷa, with dha for aṁśa; it is pūrṇa. T gives for it the following sañcārī under Bhairavi meḷa:—P m p g r s g r n s g r g m p—n d P—N S—n s n d P—m p n d p—p m p m g r s g r n S S—N s g r—g m g r—S g r r s d d p—m p d P s S S—n s n d p m p—n d p—p p p m g r s g r n S S.

(*b*)	R.	G.	D.	N.
I.	273 287·9	307·2	409·6 432	460·7

No. (21) *KIRAVĀṆI.*

(*a*) Sampūṇa—G, RL, and SK. V calls it Kiraṇāvaḷi, with pa vakra and ma omitted in ascent and in descent vakra dha and ma.

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	409·6	479·9

No. (22) KHARAHARAPRIYA.

(*a*) Sampūrṇa—G, RL, SK and RP. V calls No. (22) by the name Śrī with pūrṇa āroha and the slight use of dha, and vakra ga in descent. SD gives S r m p n s —s n p d n p m r g r s.

(*b*)	R.	G.	D.	N.
1.	287·9	307·2	432	460·7

JANYA RAGAS.

(*i*) *ŚRI.*

(*a*) Avaroha is sampūrṇa vakra. S r m p n s—s n p d n p m r g r s—G and RL. A says it omits g and d in ascent and gives the sañcārī:—r r p m g r g r s S S n s n d p m p n n s—n S r m m p p n n S r g r s n s n d p m p m M m g r r g r g r s n n S. GD calls it pūrṇa. T says it is very popular, 'the prince of rāgas', the first of meḷas and pūrṇa: its sañcārī according to him is:—S s n s—r g r s—s n p—m r m p n p—n s n s r g r s—s n n p d n p m m P etc. He says that it belongs undoubtedly to the ṣaḍja-grāma.

(*b*) Svara-values same as for No. (22).

(*ii*) *MADHYAMAVATI.*

(*a*) S r m p n s—s n p m r s—G, RL, SK and V. GD puts it under Śrīrāga meḷa. A gives r, m and n as aṁśas, with the sañcārī:—m p n s r m r s n s p m p n p m p m r m r s. T calls it rāgāṅga under Śrīrāga meḷa and gives the phrases:—p P m n p n p m r M m r m m p n n s etc.

(*b*)	R.	N.
I.	287·9	455·1

(*iii*) *MAṆIRAṄGU.*

(*a*) Dha is varjavakra in ascent, and dha is omitted in descent:—s r G m p n s—s n p m G r s—G. RL gives it as the Āndhra reading: it also gives:—s r m p n s —s n d p m g r g r s. V agrees with G. RP says it is pūrṇavakra in avaroha. According to T it is ṣāḍava by

the omission of dha, and has the phrases:—n s r g r n n s n —g r r s n—s r m p—m p n—s n p m g r—r S S etc.

(*b*)	R.	G.	N.
I.	287·9	307·2	460·7

(*iv*) *SAINDHAVI.*

(*a*) 'Madhyarāga'; N d n s r g m—p m g r s n d n s —G. V describes it as pūrṇa with dha irregularly used in ascent. SK gives the sañcāra D n s r g m p d n—d p m g r s n d. According to T it gives victory in battle and is sampūrṇa; he gives the phrases:—s r s—r s n n—d n s r—s r m m p d—p n d p—s n d p m p m g r—m g g r r s. RV gives the phrases:—n d n s r—s r g r r—r s g r r—g r s r r—r g r g s—s g r r s—g r m g g—r g r r g g r r—s r m m g g r s—r r g s g r—m m m—p p p—d d p p m—p d p d—m p m p—d p m g r—p m g r—m g r g r—s r n d s r p p d m p D P.

(*b*)	D.	N.	R.	G.
I.	216	230·3	287·9	307·2

(*v*) *UŚENĪ.*

(*a*) R is aṁśa; Sampūrṇa. Sañcāra:—S R G m p d n s—s n d p M g r s—G. RL says this is the Āndhra reading; its other reading is S r g m p d n s—s d p m g r s. V calls it a sampūrṇa rāga. According to SK the sañcāra is S r g m p n d n s in ascent. RP gives ri as aṁśa, and calls it pūrṇa and pūrṇavakra in ārohaṇa and avarohaṇa. T calls it pūrṇa, with sa for aṁśa, and gives the phrases:—r g M g r S—r g m p n m n d p m—n d n S—n d p m—p d m g r s—r g r r s. RV gives the phrases:—n d n s r—s r g r—s g r r s—r g m p m g r g s r—r p M g r m g r—S g r r—s s r g m p d p m—p d p n d n p d m—d n d n s—n d n s r S n d p—m p d n p d—m p m g r s etc. Śuddha dha occurs as an accidental in current usage.

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	432	460·7
			409·6	

(*vi*) *KĀPI.*

(*a*) S r G m r p m p d n s—s n d p m g r s—G. This is an Āndhra reading according to RL which describes the sañcāra as sampūrṇa also. V describes it as sampūrṇa. RP says it is famous and sampūrṇa in āroha and avaroha. Tuḷajā calls it pūrṇa and gives the phrases:—R g g r s—r g m p d n s—s n d p m g r s—R g g r s—n d p—D N S—p d n s r g m p m n n—s n p m m p m—p g r s r n n—d p m p d n s—r r n p m g r s.

('Hindustāni Kāpi', which is the popular form of Kāpi, uses antara ga, śuddha dha and Kākalī ni in addition.)

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	432	460·7

(*vii*) *DARBĀR.*

(*a*) S r m p d n s—S N d p m G R S. The descent is sampūrṇa and in it ri and ga are shaken—G. RL gives the same sañcāra.

(*b*)	R.	G.	D.	N.
I.	287·9	307·2	432	460·7
III.		307·2 to 337		

(*viii*) *MUKHARI.*

(*a*) In āroha dha is varjavakra. Sañcāra:—s r m p d n d s—s n d p m g r s—G and RL. According to SK it is s r m p n d s—s n d p m g r s. V puts it under No. (20) and defines it as omitting g and n in ascent. (GD identifies it with the 'śuddha' meḷa.) A assigns komala ri, pūrva ga, pūrva ni and komala dha and gives the phrases:—d S r m m P n n d p m g g r s r s s—d s r m m p d s s r g g r r s n d n n d p m p M g r s r s s Ḍ S. At present śuddha dha is also used.

(*b*)	R.	G.	D.	N.
I.	287·9	303·3	409·6 432	455·1

No. (23) *GAURI MONOHARI.*

(*a*) Sampūrṇa—G. V calls it Gaurī Veḷāvaḷi: according to him Veḷāvaḷi omits ga and ni in ascent.

(*b*)

	R. G. and D.	N.
I.	Same as for No. (22)	479·9

No. (24) *VARUṆAPRIYA.*

(*a*) Sampūrṇa—G. V calls it Vīravasantam: It is gavarja, with vakra dha, omits dha in ascent and is sampūrṇa.

(*b*)

	R. G. and N.	D.
I.	Same as for No. (23)	455·1

No. (25) *MARARAÑJANI.*

(*a*) Pūrṇa—G. V calls it Sāravati, which omits ri and ga in ascent according to him.

(*b*)

	R.	G.	D.	N.
I.	287·9	320	409·6	450

No. (26) *CARUKEŚI.*

(*a*) Pūrṇa—G. Called Taraṅgiṇī by V according to whom it omits ri and ga in ascent, and in descent uses the phrase p d n r g M g r.

(*b*)

	R. G. and D.	N.
I.	Same as for No. (25).	460·7

No. (27) *SARASAṄGI.*

(*a*) Sampūrṇa—G. 'Saurasena' omits ri in descent—V.

(*b*)

	R. G. and D.	N.
I.	Same as for No. (25).	479·9

No. (28) *HARIKAMBHOJI.*

(*a*) Sampūrṇa—G, RP etc. Called 'Harikedāragauḷa' by V who defines Kedāragauḷa as Sampūrṇa and omitting g and dha in ascent. Govinda Dīkṣita calls Harikāmbhoji by the same 'Kāmbhoji' meḷa.

(*b*)

	R.	G.	D.	N.
I.	287·9	320	432	455·1
II.	291·6	324	437·4	460·7

JANYAS.

(*i*) *KAMBHOJI.*

(*a*) Omits ni in ascent and is pūrṇa in avaroha—G. V calls it sampūrṇa and without ga and ni āroha. A says ma and dha are aṁśas and gives the phrases:—g p d s s n d s d s—d s r m m g r s—d s r m g r s s r g g r g r s—s n d p D p m g p d S r s n d p d p m g g p d s r g r s r m g r s—s r s s s n d p d p m g r g r s etc. According to him m and n are omitted in ascent. Tuḷajā calls it a bhāṣā of Kakubha, omitting m and ni in ascent and gives the phrases:—g p d s S n p—p d n p d p m g r s—s r g m r s—d n p P D D S etc. The kākalī ni is now used in the phrase 'sNp'.

(*b*)	R.	G.	D.	N.
I.	287·9	320	432	455·1
	..	..	..	479·9
II.	284·4	324	426·7	460·7
	291·6	..	437·4	..
III.	287·9	320	432	455·1
	to	to	to	to
	291·3	327·4	440	464·1

(*ii*) *KEDĀRAGAUḶA.*

(*a*) S r m p n s—s n d p m g r s—G and RL. GD describes the meḷa of the rāga as pūrṇa with pañcaśruti ri and dha and the other notes given above. RV gives the phrases:—n s r g r s—n n S r g s r—S g r g r s—m g r g r s—m d p m g—r m p d p d m p d—m p n n d p—p n d n p d m d p m g r—d p d m p n d p—s n d p d m p n S—s n d d M g g S. Tuḷajā derives it from Kāmbhoji meḷa; calls it pūrṇa and gives the sañcārī:—S s n d p—n n d p m g r—r m p n N d—n s n d p m—p n n S etc.

(*b*)	R.	G.	D.	N.
I.	287·9	320	432	455·1
II.	284·4	..	426·7	460·7
	291·6		437·4	..

(*iii*) *MOHANA.*

(*a*) S r g p d s—s d p g r s—G and RL. Classed under No. (65) by V. Tuḷajā calls this 'Mohanakalyāṇī' putting it under Kāmboḍi meḷa with the phrases:—S r s d p—d s r g r g p—g p d S—d p d s d p—d p g r—g p g d p d —g p g d p G—p G. r g r R S; he says the svara groupings are vakra in this rāga.

(*b*)	R.	G.	D.
I.	287·9	320	432
II.	291·6	..	437·4

(*iv*) *JUNJHUṬI.*

(*a*) 'Madhyarāga'; mandra ni is omitted in āroha and avaroha is sampūrṇa; Sañcāra:—d s r g m p d n—d p m g r s n d p d S—G. SK gives the sañcāra:—d s r g m p d n—n d p m g r s n d p. The sādhāraṇa ga is also now occasionally used.

(*b*)	R.	G.	D.	N.
I.	287·9	320	432	455·1
		303·3		

(*v*) *SAHANA.*

(*a*) N is aṁśa. Sañcāra:—s r g m p m d n s—S n d p m g m r g r s—G. RL says it is pavarja and vakra in ascent:—S r g m d m d n s, and in descent sampūrṇa. V classes it under No. 22, with pa as vakra in ascent and as pūrṇa. There is nowadays a tendency to introduce the Kākalī ni as an accidental: This is not sanctioned by traditional lakṣya and lakṣaṇa.

(*b*)	R.	G.	D.	N.
I.	287·9	320	432	455·1
II.	284·4	311·1	426·7	460·7
		307·2		

(*vi*) *NILAMBARI.*

(*a*) In āroha it is sampūrṇa vakra, and dha is varjavakra in avaroha; the sañcāra is:—s r g m p d p n s —s n p m g r g s—G. SK classes it under the same Meḷa,

but gives the avaroha as s n p d n p m g r g r m g s. RL classes it under Meḷa No. (29) with the sañcāra:—s r g m p d n s—S n p d p m g r g m g s. V puts it under No. (29) calls it sampūrṇa, with vakra dha, and vakra ri in avaroha; SD gives it the sañcāra:—S r g m p d p n n s n d n s—P n p M g r g s. RP puts it under No. (28). Current lakṣya makes use of Kākalī ni generally with Kaiśiki ni as accidental. RV gives the phrases:—n s S s n s g g m g g r m g s—S n p n n S—n s g r s—n n S m—g g r m g—S g r g m g m p—g m p d p m p—m p d n p m g m—p d p m g s—p S n p d p m—g m p n n s n n d—p n d n d m g m r m g s etc.

(*b*)	R.	G.	D.	N.
I.	287·9	320	432	479·9
	..	..	..	460·7
II.	291·6	307·2	426·7	455·1

(*vii*) *SAMA.*

(*a*) S r m p d s—S d p m g r s—G. V accepts this sañcāra, but classes it under No. (29). Tuḷajā puts it under No. (28), and gives the phrases:—S r s r m g r—m m d d p—d D S—S d p m p m g s r s s etc.

(*b*)	R.	G.	D.
I.	287·9	320	432

(*viii*) *DVIJAVANTI.*

(*a*) Āroha is sampūrṇa vakra, avaroha is sampūrṇa viṣamavakra. Sañcāra:—s r g m p d n s—s n d p m g r g s—G. RL says it is pūrṇa in āroha and vakra in avaroha; gives the sañcāra of the descent as S n d n d p m p g r s, calling G's rendering as Āndhra. V calls it sampūrṇa and as sung according to lakṣya; SD gives the sañcāra:—R g m p d s n d n s—n d p m g r s—r m g r s. Sādhāraṇa ga is a visiting note.

(*b*)	R.	G.	D.	N.
I.	287·9	320	432	455·1
		307·2		

(*ix*) *YARUKULAKĀMBHOJI.*

(*a*) S r m p d s—s n d p m g r s—G, RL and V. RV gives Yarukulakāmbhoji tānam as:—M P n d P n d p —m d p d p n d p—m p m d p m g r—s r m p d n d d—m p d p m g r—d d p m g r—p d s n d d—p d m p d—s n d p m g r s—r m p d s n d.

(*b*)	R.	G.	D.	N.
I.	287·9	320	432	455·1
II.	291·6		437·4	460·7
	284·4		426·7	

(*x*) *SURAṬI.*

(*a*) S r m p n s—s N d p m g p m R s—G. According to RL, g is omitted in āroha and in avaroha. V defines it as omitting g and d in ascent: calls it Suraṭa.

(*b*)	R.	G.	D.	N.
I.	287·9	324	432	455·1
II.	284·4			460·7

(*xi*) *KHAMAS.*

(*a*) G defines it is bereft of ri in ascent, and in avaroha is sama-viṣama-vakra, and mixed with catuś-śruti ri. His sañcāra is S g m p d n s—n s n d p m g s. Now kākalī ni is occasionally used as an accidental.

(*b*)	R.	G.	D.	N.
I.	287·9	324	432	455·1
				486
II.		320	426·7	460·7

(*xii*) *NAṬAKURAÑJI.*

(*a*) S r g m d n s—s n d m g s—G. According to SK, it is S r g m d n s—s n d m p m g s. V says it omits p and r in descent. T calls it pūrṇa, and says pa is leapt over; he gives the phrases:—S n d n s—n s r—G m r s n d—n s n p D—n d m g s—m g m n d n s—etc. RV gives:—S n d n p d n d n s—n s r r s r—m g s—g m p m m g—s m g m m n n d n s—etc.

(*b*)	R.	G.	D.	N.
I.	287·9	324	432	455·1

No. (29) DHIRAŚAṄKARĀBHARAṆAM.

(*a*) Sampūrṇa—G and V. SK and RL class 'Śaṅkarābharaṇam' as a janya under this scale with the sañcāra:—S r g m p d n s—s d p m g r s. GD calls it a sampūrṇa rāga with pañcaśruti ri and dha and describes its meḷa. Tuḷajā makes an interesting distinction between the meḷa and the rāga named Śaṅkarābharaṇam; he says that this rāga is derived from Śaṅkarābharaṇa meḷa, and uses pañcaśruti dha. He gives the phrases:—s s n d N S d p —m g r g m p d n S n D—g—g r s—s n d n S—S n P—D p —g p d S N S D M G m R s etc. RV gives the phrases:—n s d n p d n s r s—g m r g—s m g m p m g etc.

(*b*)	R.	G.	D.	N.
I.	287·9	324	432	479·9
II.	291·6	320	437·4	486
III.	287·9 to 291·3	324 to 330	432 to 440	479·9 to 490

JANYA RĀGAS.

(*i*) *KURAÑJI.*

(*a*) 'Madhya rāga'; n s r g m p d—d p m g r s n s —G. RL gives n s r g m p d n—n d p m g r s n; its Āndhra reading is S n s r g m p d—d p m g r s n s. V defines it as sampūrṇa omitting dha in ascent, with vakra dha in descent. T calls it pūrṇa and upāṅga: in ascent according to him g and d, and in descent d are leapt over: he gives the phrases:—P m g r s—n n s r m g g r s—s n n p m m— m g g r S—n n s—r m m g m p n n S etc.

(*b*)	N.	R.	G.	D.
I.	243	287·9	320	432

(*ii*) *KEDĀRA.*

(*a*) R and D are varja and vakra in āroha, and the avaroha is sampūrṇavakra. Catuś-śruti dha is in-

cluded. Sañcāra:—s m g m p n s—S n p m g m d p m g r s—G. According to RL, s r g m p n s—s n p m g r s; the Andhra reading being s m g m p n s—s n p m g r s. V says it is an auḍava, by omitting dha, and its ga is vakra. T says it is ṣāḍava by the omission of dha and gives the phrases:—m g m p P n M P n SS—m g m g r s n s etc.

(*b*)	R.	G.	D.	N.
I.	287·9	324	426·7	486
II.		320		479·9

(*vii*) *BYAG.*

(*a*) S g m p n d n s—s n d p m G r s—G. Kaiśiki ni is now used as a visiting note.

(*b*)	R.	G.	D.	N.
I.	287·9	324	432	479·9
				460·7

(*iv*) *HAṀSADHVANI.*

(*a*) S r g p n s—s n p g r s—G and V.

(*b*)	R.	G	N.
I.	287·9	324	486
II.	273		474·1

(*v*) *DEVAGANDHARI.*

(*a*) In āroha it is sampūrṇa vakra, and sampūrṇa in avaroha. Sañcāra:—s r g r m p d n S—s n D p m g R S—G. According to SK it is s r m p d s—s n d N d p m R S. (GD and T class it as sampūrṇa under Śrīrāga meḷa) Kaiśiki ni is used as a visiting note. V describes it under No. 22 as sampūrṇa with vakra ri and dha.

(*b*)	R.	G.	D.	N.
I.	287·9	324	432	479·9
				460·7
II.		320		455·1

(*vi*) *ARABHI.*

(*a*) S r m p d s—s n d p m g r s—G. V says it omits g and r in ascent, and occasionally uses ri in ascent. RL gives ri as aṁśa. According to GD it is sampūrṇa.

T gives the sañcārī:—S D R S—M g r S N—d n s—d d p—p m p d n d n s r M g r—r n s—D N N S. Tyāgarāja avoids the open use of ni in his Pañcaratna Kṛti in Ārabhī. In current usage g and n are very sparingly applied.

(*b*)	R.	G.	D.	N.
I.	287·9	324	432	479·9

(*vii*) *NAVAROJU.*

(*a*) Madhyarāga. P d n s r g m p—m g r s n d p—G. RL repeats this lakṣaṇa and gives dha as aṁśa. V says it is a sampūrṇa rāga, its range being within the two pañcamas (*i.e.*, mandra and madhyama).

(*b*)	D.	N.	R.	G.
I.	216	243	287·9	324

(*viii*) *AṬAṆA.*

(*a*) In āroha g and d are omitted. S r m p n s—s n D p m g r s—G. Sampūrṇa according to V who classes it under No. (28). RL classes it under No. (28) giving the sañcāra:—S r g m p d n s—S n p d p m g m r s; dha is aṁśa. Kaiśiki ni is now used as an accidental.

(*b*)	R.	G.	D.	N.
I.	287·9	320	432	479·9
				455·1
III.		303·3 to 341·4		

(*ix*) *BILAHARI.*

(*a*) S r g p d s—s n d p m g r s—G. V calls it Bilāhuri with vakra ma in ascent and occasionally using ni. T calls it Bilāhuri and gives the phrases:—s r g p m g g r s—r g p d s n d s n d p m g r s n—d r S—n s d p m g g r s—etc. Kaiśiki ni is also occasionally used.

(*b*)	R.	G.	D.	N.
I.	287·9	320	432	479·9
				460·7

(*x*) *ŚUDDHASĀVERI.*

(*a*) S r m p d s—s ḍ p m r s—G. With the same sañcāra, classed under No. (28) in RL. According to V, it is classed under No. (1) as an auḍava omitting ga and ni. T classes it under Māyāmāḷava with the above lakṣaṇa and gives the phrases:—s ḍ s—d d s s r r M M—r m p d d P—p M p—D S. We may believe that somehow ri and dha became sharpened and T's Śuddhasāveri attained the modern form.

(*b*)

	R.	D.
I.	287·9	432

(*xi*) *BEGAḌA.*

(*a*) Sampūrṇa vakra in āroha, and sampūrṇa in avaroha. S g r g M p d N d p s—S N ḍ p M g r s—G. V defines it as sampūrṇa and as omitting ri in ascent. RL says r and d are omitted in ascent and the rāga is sung with sampūrṇa prayoga in descent: it gives the sañcāra:—s g m p n s or s g r g m p d N d p s—s n d p m g r s. Ma and ni give character to this rāga and their peculiar values are given below.

(*b*)

	R.	G.	M.	D.	N.
I.	287·9	324	341·4	432	479·9
II.			345·6		486
			349·9		460·7
			352		469·3
III.			341·4		455·1
			to		to
			380·6		485·5

No. (30) *NAGANANDI.*

(*a*) Sampūrṇa G. 'Nāgābharaṇam'; vakra d in āroha and no d in descent—V.

(*b*)

	R.	G.	N.	D.
I.	Same as for No. (29).			474·1

No. (31) *YAGAPRIYA.*

(*a*) Sampūrṇa—G. 'Kalāvatī'; omits n in ascent and g is vakra in descent—V.

(*b*)	R.	G.	D.	N.
I.	307·2	324	409·6	436·8

No. (32) *RĀGAVARDHANI.*

(*a*) Sampūrṇa—G. 'Rāgacūḍāmaṇi': omits g in āroha and d in descent. R is varja—V.

(*b*)	R.	G.	D.	N.
I.	Same as for No. (31).			455·1

No. (33) *GAṄGEYABHŪṢAṆI.*

(*a*) Sampūrṇa—G. 'Gaṅgātaraṅgiṇī': D and r are vakra in descent—V.

(*b*)	R.	G.	D.	N.
I.	Same as for No. (31).			479·9

No. (34) *VĀGADHĪŚVARI.*

(*a*) Pūrṇa—G. 'Bhogacchāyānāṭa': omits d in āroha; d is vakra in avaroha. G is varjya—V.

(*b*)	R.	G.	N.	D.
I.	Same as for No. (32).			432

No. (35) *ŚŪLINI.*

(*a*) Pūrṇa—G. called 'Śailadeśākṣi' by V, according to whom r and n are omitted in ascent, and g in descent.

(*b*)	R.	G.	D.	N.
I.	Same as for No. (34)			479·9

JANYA.

(*i*) *DEŚĀKṢI.*

(*a*) Defined by G as consisting of ṣaṭśruti ri, antara ga, catuś-śruti dha, kākalī ni, and omitting m and n in ascent. The avaroha is sampūrṇa vakra. G adds however that the rāga is derived from Harikāmbhoji meḷa.

RL calls the rāga Deśākṣarī' and defines it as omitting ni in ascent and as being vakrapūrṇa in avaroha; It gives the sañcāra S r g m p d s—s n d p m g m r s. SK classes it under No. (35), which is supported by a gīta by Subramanya Aiyar of Tiruvaiyar.

GD defines Deśākṣī meḷa as having śuddha ma, pañca-śruti dha, ṣaṭśruti ri, antara ga and kākalī ni, T derives Deśākṣī from the above meḷa and gives the sañcārī:—g p d d s—m m m r—s s s n—p d r—P d—S n p p m m r s—r s s n d S S—d d p d S s—d s n p p m r—g p D S etc. V defines that Śailadeśākṣī omits r and n in ascent and g in descent.

(*b*)	R.	G.	D.	N.
I.	303·3	324	432	479·9

No. (36) *CALANĀṬA.*

(*a*) Sampūrṇa—G. Under this meḷa, G describes Nāṭa as of sampūrṇa āroha and as omitting g and d in descent. This agrees with V's definition. A gives the sañcārī:—r g m p d n s s n p m m p m m R S r g m r g m p d n s d n—etc. T calls it a Bhāṣāṅga derived from Nāṭa meḷa; he says ga is omitted and gives the sañcārī:—S S S n p—r g m d n s s n M p p—n p N S—S S S n p S S S n—S S R r r g m p d n S n p etc.

(*b*)	R.	G.	D.	N.
I.	307·2	324	460·7	479·9
II.	303·3		435·5	486
	311·1		440	
III.	303·3 to 317·7			

The foregoing are called 'Pūrvāṅga rāgas' by Veṅkaṭamakhin. The meḷas No. (37) to No. (72) are called 'Uttarāṅga rāgas' by him and differ from the former group only by the presence of the 'Pratimadhyama'. This single note is enough to establish a different rāga-personality as between two scales which have all other notes in common. Hence the values of the notes given in the meḷakartās in the Pūrvāṅga group apply generally to this group also, which can be taken to be distinguished solely by the value of the 'Pratimadhyama' in almost all the cases. The difference in nomenclature and sañcāra between the schools of G and V can be perceived by reference to the gītas by

G and V, the Caturdaṇḍī-prakāśikā and the Saṁgīta-sampradāyapradarśinī. Therefore only a few well known scales and rāgas of the uttarāṅga group are analysed here.

No. (39) *JHĀLAVARĀḶI.*

(*a*) Sampūrṇa—G. V calls this Dhāḷi Varāḷikā: he describes Varāḷī as pūrṇa. This definition of Varāḷī can be taken as final. GD defines it as having Śuddha S, p, d, and g, kākalī ni, and ṣaṭśruti ma. T says Varāḷī is pūrṇa, derived from this meḷa, a Bhinnapañcama Bhāṣā, with the sañcārī: g r g m p d—m p d s S n d p m G r—S r g m p d n s—r g m p d n d p—m d n d m g g r S, etc.

(*b*)

	R.	G.	M.	D.	N.
I.	266·7	300	364·7	399·9	491·5
II.	284·4 273·0	291	379·2	409·6	505·6
III.		287·9 to 293·3			486 to 505·6

No. (45) *ŚUBHA PANTUVARĀḶI.*

(*a*) Pūrṇa—G. V calls it Śaiva Pantuvarāḷikā. He defines 'Pantuvarāḷi' as pūrṇa. Here also there is remarkable agreement between the 2 authorities, which should give Pantuvarāḷī a final definition. RL defines it as Sampūrṇa in āroha, and omitting pa in descent. According to T this is pūrṇa and derived from Sindhurāmakriyā Meḷa (consisting of Śuddha ri, sādhāraṇa ga, 'antara' ni and Vikṛta Pañcama ma) with the sañcārī: S r g m d d n d N s—n d p m g r S—r G r r S—g r n d N S—etc.

(*b*)

	R.	G.	M.	D.	N.
I.	273	307·2	364·1	409·6	486

No. (51) *KAMAVARDHANI.*

(*a*) Pūrṇa—G. Called Kāśīrāmakriyā by V, according to whom it is sampūrṇa but with vakra ri in ascent.

(*b*)

	R.	G.	M.	D.	N.
I.	273	324	364·1	409·6	486

No. (53) *GAMANAŚRAMA.*

(*a*) Pūrṇa—G. Called Gamakakriyā by V.

(*b*)

	R.	G.	M.	D.	N.
I.	273	324	364·1	432	479·9

JANYA.

(*i*) *PŪRVIKALYAṆI.*

(*a*) Sañcāra: S r g m p d n d s—S n d p m g r s—G.

(*b*)

	R.	G.	M.	D.	N.
I.		Same as for No. (53).			

No. (65) *MECAKALYAṆI.*

(*a*) Samūrṇa—G. Called Śānta Kalyāṇī by V.

(*b*)

	R.	G.	M.	D.	N.
I.	287·9	324	364·1	432	486
II.	291·6	337	368·6	437·4	497·6

JANYAS

(*i*) *YAMUNA KALYAṆI.*

(*a*) Ni is varjavakra in ascent and descent. Sañcāra: S r g p m p d s—S d p m p g r s—G. V defines it as sampūrṇa, and as using śuddha ma; SD gives the sañcāra: S r g m p d n s—S n d p m G R S. SD gives g, r and d as aṁśa. Śuddha ma is also used as an accidental.

(*b*)

	R.	G.	M.	D.
I.	287·9	324	364·1 341·4	432

(*ii*) *HAMIRKALYAṆI.*

(*a*) S p m p d n s—S n d p g m g r s—G. SD gives sampūrṇa āroha and avaroha, for this rāga, and mentions g, d and r as aṁśas. Śuddha ma is used as an accidental.

(b)	R.	G.	M.	D.	N.
I.	287·9	324	364·1 341·4	432	486

The foregoing rāgas represent perhaps the most important among those prevalent in the Karnatic System. Their lakṣaṇa is not summed up merely by a description of their sañcārī, but its essence is embedded in lakṣya. According to this their constitution is found to be rich with colours endowed by usage and constant refinement. What this compositeness means with reference to the problem of the śrutis is the aim of the study of the vibration numbers of the svaras occurring in these rāgas, and their values have been recorded in the light of my observations.

Generally there is agreement between different Schools as regards the sañcāra of the rāgas other than those recorded above, making allowance for differences in the names used by Govinda and Veṅkaṭamakhin. For their ārohaṇa and avarohaṇa reference may be made to the gītas by Govinda, Veṅkaṭamakhin, Paiḍāl Gurumūrti Śastrī, Tiruvaiyar Subramanya Aiyar, etc., and to the list of rāgas given in the Gānendu Śekharam, Gāyakalocanam, Gānabhāskaram, Saṅgīta Sampradāya Pradarśinī and other standard texts.

It is to be noted that many compositions of Śrī Tyāgarāja in uncommon rāgas are from time to time being brought to the notice of the public. There is reason to believe that these rāgas have been created by Tyāgarāja in most cases, according to the Meḷakartā scheme, and the lakṣaṇas for them are determined by the songs themselves. This adds to the difficulty of drawing up a final list of rāgas. Moreover, songs are being composed at present in many rare rāgas, the nature of which is therefore being defined for the first time. In Appendix V are given the ārohī and avarohī of some rare rāgas in which songs have been composed in recent times.

APPENDIX I.

SOME INTERVALS COMMON TO VEDIC AND KARNATIC MUSIC.

In the following passage:—

R S S Ṇ S R S r S Ṇ S S R s n S r s s
yo(a)pām puṣpam veda—puṣpavān prajāvān paśumān bhavati
—(Yajurveda)

R is sometimes intoned as a suddha ṛṣabha of less than 3 śrutis (corresponding to the dviśruti ṛṣabha of Karnatic music) but more often as a catuśśruti ṛṣabha. When rarely the verses are chanted at twice the normal pitch, R partakes the nature of a ṣaṭśruti ṛṣabha. N is sometimes akin to Kākali ni (15|8) but usually occurs as an interval divided from Sa by a tone.

In the line—

s R N s s R n S Ṇ s R s Ṇ S R N S S R
yathānaś śamasa dvipade catuṣpade viśvam puṣṭaṅ grāme
N S s R s S
asmin anāturam— (Yajurveda)

the intervals divided by asterisks are divided from one another by six śrutis approximately. These can be treated as ṣaṭśruti intervals, which however do not occur as independent intervals but only result in the course of the particular piece chanted. There are numerous instances of this kind of interval in Vedic music of the above type.

The following Sāman using 7 notes, the only example of its kind, affords interesting and important material for study. The rendering in notation (the same as is given in Chapter II) is by Mr. Sankaranarayana Aiyar.

मो^{5} षुत्वा वा घ त श्च ना ऽ^{6} ए। आ^{2} रे^{1} अ

A. सा स निस रीस ससा स सा स नीध। रीं स गा गा

B. रीं रीं रीं रीं रिं रीं रिं रीं सा रीं। पा धा धा

C. धा धा धा धा ध धा ध धा नी धा। गा मा मा

स्म त्रि री र मा ऽ^{2} नू—हा ऽ^{2} ऊ। ऊ वा ऽ^{2} इ—

A. गा ग गा ग गा ऽ री स—गा री स गारिं गारिं गा री सा—

B. धा ध धा ध धा पा—पा ऽ पा धा धा धा ऽ पा प—

C. मा म मा म मा गा—गा गा मा मा मा गा ग—
ऊ7—आ रा त्ता ह्रा स ध मा दा ऽ2 म्—
A. मा—रीस गारि गारि गारि ग ग गारि गा री सा—
B. नी—पा धा धा धा ध ध धा धा पा प—
C. पा—गा मा मा मा म म मा मा गा ग—
ह्रा ऽ2 ऊ ऊ वा ऽ2 इ—ऊ7 ऽ2—न आ गा3 ऽ234 ह्री ॥
A. गा रीस गारि गारि गा री स—मा री स—स सा नी सा सा सा नि नी ध ॥
B. पा पा धा धा धा पा प—नी पा—प पा मा पा मा गा री ॥
C. गा गा मा मा मा गा ग—पा गा—ग गा री गा री सा धा ॥

1 2 3 5
आ इ इ—वा सौ वा ओ ऽ 234 वा ॥ उ प श्रू ऽ 23
A. गा ग ग्री—गारी सा सा नी सा सा सानि नीध ॥ स गा गा री स
B. धा ध धा—धा पा पा मा पा मा गा री ॥ प धा धा पा म
C. मा म मा—मा गा गा री गा री सा धा ॥ ग मा मा गा री

2 1
धा ऽ 343 इ—ओ ऽ 2345 इ ॥ डा ॥
A. सा नी धा सा सा—गा री सा नी धा पा सा ॥ नी धा
B. पा मा गा मा म—धा पा मा गा री रि ॥ री ॥
C. गा री सा रीरि—मा गा री सा धा ध ॥ धा ॥

This Sāman makes use of seven notes, a complete Saptaka from Kruṣṭa which occurs three times (under the number 7) to atisvārya. The notes according to A mode (representing current practice) may be seen to have close affinity to those of the ṣaḍja grāma. But it is very difficult to formulate a general rule governing the Sāman notes of A mode. Because, very often, the first note or prathama is represented both by ga and ri and the mandra or fifth note by mandra pa; the atisvārya is taken to and rendered as ṣaḍja; the closes on the 1st, 2nd, 3rd, 4th and 5th notes are often inexplicably rendered on the ṣaḍja svara; and there is no conscious effort to intone kruṣṭa as madhyama, though it is perceptibly raised above the prathama svara. Under these conditions, each Sāman according to current usage has to be studied by itself. Most Sāmans are now sung to the notes ga (flat), ri (sharp), sa, ni (flat) and dha (sharp), the first three in the madhya octave and the other two in the mandra octave. Ṣaḍja, from its dominant influence, can be said to function as the keynote, and the nyāsa is too often on this note though it may be against the note prescribed as the final of the melody.

In the above Sāman the progression of the scale is from madhya madhyama to mandra pañcama. The Kruṣṭa is rendered as a śuddha madhyama though it is sometimes slightly less in pitch. In the music of the Gāndharva Veda the 3 notes in mandra sthāna, 'n, d and p' seem to have been raised by an octave and superimposed on the tetrachord 'm g r s' which gives the madhya Saptaka. (This inference is based on the assumption that the current rendering of the Sāma Veda represents the ancient method.) The Sāman notes in the form of this Saptaka correspond to the mūrchana of the ṣaḍja grāma called 'Uttaramandrā' (can it be that the name 'Uttaramandrā' contains a reference to the raising of the mandra notes to the madhya sthāna?) In this Saptaka, Kruṣṭa is equal to ma (śuddha) and is literally a madhyama or middle note. This gamut, spreading over the 3 sthānas, *i.e.*, the lower, middle and higher registers, (already mentioned in the Ṛkprāti-śākhya) is at the starting point of the practice of secular music.

The Nārada Śikṣā, though presenting difficulties regarding the śrutis and the order of svaras used in the Sāman chant, goes a long way towards the elucidation of the general nature of the svaras of the Sāman scale. The relation of the Sāman notes and the notes of the flute in the Śikṣā is very important. The latter are mentioned simply by their names, without any other qualification, and as such, in my opinion, they refer to the śuddha notes of secular music. This inference is supported by 2 facts. First, Śārṅgadeva refers to the notes of the flute in the same manner without any qualification, meaning by them the śuddha notes, and Kallinātha accepts this usage (*vide* verses 441 to 446, the Vādyādhyāya of the Saṅgīta Ratnākara). Secondly, the current intonation of the notes of the Sāman chant is not incompatible with the Śuddha notes of lay music taken to be mentioned by the Nārada Śikṣā, but closely corresponds to them. It is true that there is no strict uniformity in the notes in the current modes of rendering Sāmans, which generally are allied to the scale Kharaharapriyā. But if it is accepted, that the Sāma Veda was chanted to the Śuddha svaras mentioned by Bharata and Śārṅgadeva on the basis of the illustration of the Nārada Śikṣā with reference to the flute, the intervals used in the Sāman scale must be the same as those of the ṣaḍja grāma, consisting of two, three and four śrutis.

APPENDIX II.

SOME UNFAMILIAR INTERVALS USED IN CURRENT RĀGAS.

In addition to the intervals given in Chapter II, the following also occur in the rendering of various rāgas:—

256/225	40/27	128/75
	36/25	225/128
729/640	128/75	160/81
75/64	2187/1600	
243/200	1280/729	
2187/1600	50/27	
176/128	243/125	

The vibrational values corresponding to these ratios are to be found in Chapter VII. It is to be noted that the more complex intervals often occur as modifications of the main notes which sustain a melody-type, oscillating about them freely within the range prescribed by the nature of the rāga, and acting as the vehicle of gamakas while being shaped by them. It is with reference to such intervals that the full significance of the gamaka or the shake of a note being a vital manipulation of melody can be adequately realised.

In chapter VII some values of 'illusory notes,' (mentioned in Chapter II) which cannot be ignored in the practical rendering of music, are also given. For example, in Toḍi, G=312:9, and N=469:3; in Bhūpāla, G=301:7; and in Bhairavī, N=450:7. Other instances may be found in this chapter.

APPENDIX III.

VEṄKAṬAMAKHIN AND GOVINDA.

According to Mr. M. Ramakrishna Kavi copies of the Saṅgīta Śāstra Saṅkṣepa are available in the Andhra country, in Mysore and in the south, besides the copy in the Adyar Library. He is of the opinion that the work is more ancient than the Caturdaṇḍīprakāśikā. But any criticism of the scheme of 72 meḷakartās may be dated perhaps only since the time of Veṅkaṭamakhin. I consulted Mr. K. V. Ramachandran's copy of the Adyar manuscript. There is a printed version of the gītas contained in this rescension, and other written versions similar to this are stated to have been in circulation among artists in the Tanjore district for the past one century and more.

The differences between Veṅkaṭamakhin and Govinda in their treatment of theory are striking and fundamental and indicate the progress of the art. In Chapter II it was shown how Govinda departed from the Caturdaṇḍīprakāśikā in adopting 6 varieties each of ṛṣabha, gāndhāra, dhaivata and niṣāda, and 3 varieties of madhyama. He defines (evidently) śuddha svaras thus:—

बहवो मेलकर्तारो वर्तन्ते ह्यादिसंकराः ॥
तेषां मध्ये (s) च्युते (त ?) रायमेळवीणानुसारतः ॥
द्वे द्वे निषादगान्धारौ त्रिस्त्री ऋषभधैवतौ ॥
पञ्च पञ्च चतुश्चैव षड्जमध्यमपञ्चमाः ॥

The reference to the Acyuta Rāya Meḷa Vīṇā may be associated with the Vīṇā of the same name mentioned by Rāmāmātya. The assignment of five śrutis to ṣaḍja and pañcama respectively is intriguing. Govinda's reason for this seems to be the fact that śuddha niṣāda and ṣaḍja according to his reckoning are separated by five śrutis and that śuddha gāndhāra and śuddha madhyama are similarly separated by five śrutis. Even according to him pañcama consists of four śrutis. He divides the octave into 12 sthānas, by combining the first and second śrutis into the first 'graha', the third and fourth śrutis into the second 'graha' and so on. These 12 sthānas are explained as the basic constituents of the 72 meḷas.

In the treatment of meḷas and their janya rāgas, the differences between the two theorists are no less sharp, in spite of many points

of agreement. The janaka meḷas of Veṅkaṭamakhin are treated by Govinda as janya rāgas in most cases. The assignment of śrutis to some notes in the case of many meḷas and rāgas, and the naming of several rāgas make the difference marked. Govinda defines several rāgas not found in the Caturdaṇḍīprakāśikā.

Veṅkaṭamakhin groups rāgas according to their graha, aṁśa and nyāsa. These 3 are represented by a single note, and the resultant groups are seven according to the seven notes of the gamut. He enumerates 7 gauḷas. He calls Nāṭa a Bhāṣāṅga Rāga, and a sampūrṇa (though it has varjya svaras in avarohaṇa). Śuddha vasanta is described by him to be a rāgāṅgarāga and a janya of Śaṅkarābharaṇa. Śrī, Āṛabhī, Kedāragauḷa, etc., which have lopya svaras in their sañcāra, are called pūrṇa. His idea seems to be that a Rāga can be called pūrṇa if all the 7 notes in the octave are used taking both āroha and avaroha into account. But Govinda restricts the term 'pūrṇa' to apply to rāgas or scales with 7 notes in consecutive or regular succession in both āroha and avaroha. Current usage conforms to this application. Veṅkaṭamakhin's use of the terms 'ṣāḍava' and 'auḍava' are still accepted; according to Veṅkaṭamakhin, Dhanyāsi, Bhūpāla, Nāgadhvani, Gurjarī, Karnāṭa baṅgāḷa, Madhyamādi and Gauḷa are rāgāṅgas; Bhairavī and Chāyā gauḷa are upāṅga rāgas (*vide* the Rāgaprakaraṇa of his work). This classification, excepting Chāyāgauḷa, does not agree with that of the anubandha appended to the Caturdaṇḍīprakāśikā. The classification in the anubandha is the same as that adopted by Mr. Subbarāma Dīkṣitar; in it is found another division of rāgas into ghana, rakti and deśīya. Veṅkaṭamakhin states that Sāmavarāḷī emanated from the Sāma Veda and that the sweetness of Madhyamādi is best expressed through the flute. Kalyāṇī, a favourite among Mahommedans, and Pantuvarāḷī, popular amongst common people, are condemned by him as unfit for use in gīta, prabandha, etc.

Veṅkaṭamakhin and Govinda differ fundamentally in their treatment of the meḷakartā rāgas. Govinda defines everyone of the 72 scales as sampūrṇa in ārohaṇa and avarohaṇa. Consequently he classifies Veṅkaṭamakhin's scales as janyas wherever they are not sampūrṇa in ascent and descent. He seems to be guided by the rule that a scale should be pūrṇa in āroha and avaroha. In defining the scales Govinda gives the name of the kartā given by Veṅkaṭamakhin (which is often corrupted), secondly his own name for the kartā, and the sañcāra for Veṅkaṭamakhin's kartā (which according to him is a janya). The svaras and in many cases even

their śrutis are given by him in ślokas. What is noteworthy is that Govinda renders even the ārohī and avarohī of each scale and rāga in anuṣṭubh metre. In the gītas for scales the svaras, śrutis (wherever necessary) and the sañcāra are explained: what is very important to note is the pūrṇa sañcāra of the āroha and avaroha of each scale in 2 consecutive bars before the close of each gīta.

In the following list of Govinda's scales, (*a*) represents the name of the scale given by Govinda and which usually corresponds with Veṅkaṭamakhin's name: (*b*) indicates Govinda's own name for the scale, which in each case is sampūrṇa in āroha and avaroha; and (*c*) gives Govinda's sañcāra for Veṅkaṭamakhin's scale mentioned in (*a*). This comparative study will show the place assigned by Govinda to Veṅkaṭamakhin's scales in his statement of theory. The rāgas under (*c*) are described by Govinda as janyas of scales given under (*b*). The definitions under (*c*) are reproduced here as found in the original.

No. (1):—(*a*) Kanakāmbarī
(*b*) Kanakāṅgī
(*c*) Kanakāmbarī: स ग री गा म पा धा नि । ध स नी मा प मा ग री ॥

No. (2):—(*a*) Phenadyuti
(*b*) Ratnāṅgī
(*c*) Phenadyuti: स री मा पा ध सा नी सा । स नी धा पा म गा रि सा ॥

No. (3):—(*a*) Sāmavarāḷī
(*b*) Gānamūrti
(*c*) Sāmavarāḷī: स रि मा पा ध नी सा नि । ध प मा गा रि सा नि सा ॥

No. (4):—(*a*) Bhānumātī
(*b*) Vanaspāti
(*c*) Bhānumāti: स रि गा रि म पा सा सा । स नि धा पा म गा रि सा ॥

No. (5):—(*a*) Manorañjanī
(*b*) Mānavātī
(*c*) Manorañjanī: स रि मा पा ध नी सा नि । स नि धा पा ध मा ग री ॥

No. (6):—(*a*) Tanukīrti
(*b*) Tānarūpi
(*c*) Tanukīrti: स रि मा पा नि सा सा नि । ध नि पा मा ग मा रि सा ॥

No. (7):—(*a*) Senāgraṇī
(*b*) Senāpāti
(*c*) Senāgraṇī (The śloka-definition is missing: according to the gīta, pa is varjavakra in ascent, and descent is pūrṇa)

No. (8):—(*a*) Toḍi
(*b*) Hanumattoḍi
(*c*) Toḍi: स रि गा मा ध नी सा स । स नि धा मा ग री स सा ॥

No. (9):—(*a*) Bhinnaṣaḍjam
(*b*) Dhenuka
(*c*) Bhinnaṣaḍjam: स रि गा री प मा पा नी । स नि पा मा ग री स री ॥

No. (10):—(*a*) Naṭābharaṇam
(*b*) Nāṭakapriyā
(*c*) Naṭābharaṇam: स रि गा मा प धा धा नि । स नि धा पा म गा म री ॥

No. (11):—(*a*) Kokilārāva
(*b*) Kokilapriyā
(*c*) Kokilārāva: स रि गा रि म पा धा नि । स नि धा प म गा रि सा ॥

No. (12):—(*a*) Rūpyanaga
(*b*) Rūpāvatī
(*c*) Rūpyanaga: स म पा धा ध नी सा नि । ध नि पा मा ग री स सा ॥

No. (13):—(*a*) Hejjujji
(*b*) Vakuḷābharaṇam
(*c*) Hejjujji: स रि गा मा प धा धा सा । स नि धा पा म गा रि सा ॥

No. (14):—(*a*) Vasantabhairavī
(*b*) Vakuḷābharaṇam
(*c*) Vasantabhairavī: स रि गा मा ध नी सा नि । ध म पा मा ग री रि सा ॥

No. (15):—(*a*) Māyāmāḷavagauḷa
(*b*) *Ibid*
(*c*) *Ibid.*

No. (16):—(*a*) Vegavāhinī
(*b*) Cakravāka
(*c*) Vegavāhinī: स रि गा मा प धा नी ध । स नि धा पा म गा रि सा ॥

No. (17) :—(*a*) Supradīpa
(*b*) Sūryakānta
(*c*) Supradīpa: स रि मा पा ध नी नि सा । नि ध पा मा ग मा रि सा ॥

No. (18) :—(*a*) Śuddhamādhavī
(*b*) Hāṭakāmbarī
(*c*) Śuddhamādhavī: स ग री गा म पा धा नि । ध स नी धा प मा ग री ॥

No. (19) :—(*a*) Jhaṅkārabhramarī
(*b*) Jhaṅkāradhvani
(*c*) Jhaṅkārabhramarī: स ग री गा म पा धा नि । ध स नी धा प मा ग री ॥

No. (20) :—(*a*) Bhairavī
(*b*) Naṭabhairavī
(*c*) Bhairavī: स रि गा मा ध नी सा नी । ध म मा गा रि सा नि सा ॥

No. (21) :—(*a*) Kiraṇāvaḷi
(*b*) Kīravāṇī
(*c*) Kiraṇāvali: स रि गा म प धा नी स । स स पा मा ग री रि सा ॥

No. (22) :—(*a*) Śrī Rāga
(*b*) Kharaharapriyā
(*c*) Śrī Rāga: स रि मा पा नि सा नी प । ध नि पा मा रि गा रि सा ॥

No. (23) :—(*a*) Velāvalī
(*b*) Gaurīmanoharī
(*c*) Velāvalī: स रि गा म म पा धा स । स नि धा प म गा रि सा ॥

No. (24) :—(*a*) Vīravasantam
(*b*) Varuṇapriya
(*c*) Vīravasantam: स रि गा मा प सा पा स । नि ध नी प म गा रि सा ॥

No. (25) :—(*a*) Śāradvatī
(*b*) Mārarañjanī
(*c*) Śāradvatī: स रि गा म प धा नी ध । स नि धा प म गा रि सा ॥

No. (26) :—(*a*) Taraṅgiṇī
(*b*) Cārukeśī
(*c*) Taraṅgiṇī: स रि मा गा रि मा पा ध । स नि धा प म गा रि सा ॥

No. (27) :—(*a*) Surasena
(*b*) Sarasāṅgī
(*c*) Surasena: स रि गा मा प धा सा नि । ध प मा म ग री रि सा ॥

No. (28) :—(*a*) Kāmbhoji(di)
(*b*) Harikāmbodi
(*c*) Kāmbhoji: स रि गा म प धा धा स । स नि धा प म गा रि सा ॥

No. (29) :—(*a*) Śaṅkarābharaṇa
(*b*) Dhīraśaṅkarābharaṇa
(*c*) *Ibid.*

No. (30) :—(*a*) Sāmanta
(*b*) Nāgānandinī
(*c*) Sāmanta: स रि सा मा ग मा पा धा । नि सा सा नी ध नी प मा ॥ ग ग री सा रि सा...

No. (31) :—(*a*) Kalahaṁsa
(*b*) Yāgapriyā
(*c*) Kalahaṁsa: स रि मा धा ध नी धा स । स नि धा प म री रि सा ॥

No. (32) :—(*a*) Rāgacūḍāmaṇi
(*b*) Rāgavardhanī
(*c*) Rāgacūḍāmaṇi: स रि गा मा म पा सा सा । नि ध मा रि ग सा ग सा ॥

No. (33) :—(*a*) Gaṅgātaraṅgiṇī
(*b*) Gāṅgeyabhūṣaṇī
(*c*) Gaṅgātaraṅgiṇī स रि गा मा प सा नी ध । प मा गा म म री रि सा ॥

No. (34) :—(*a*) Chāyānāṭa
(*b*) Vāgadhīśvarī
(*c*) Chāyānāṭa: स रि गा म प मा पा स । स नि धा नि प मा रि सा ॥

No. (35) :—(*a*) Deśākṣī
(*b*) Śūlinī
(*c*) Deśākṣī: स रि गा म प धा सा नि । ध प मा म ग री रि सा ॥

No. (36) :—(*a*) Nāṭa
(*b*) Calanāṭa
(*c*) Nāṭa: स रि गा म प धा नी स । स नि पा म म री रि सा ॥

No. (37):—

(*b*) Sāḷaga

No. (38):—(*a*) Jaganmohana

(*b*) Jalārṇava

(*c*) Jaganmohana: स रि ग मा प धा सा नि ।
स नि धा प म गा रि सा ॥

No. (39):—(*a*) Varāḷi

(*b*) Jhalavarāḷi

No. (40):—(*a*) Nabhomaṇi

(*b*) Navanītam

(*c*) Nabhomaṇi (In the gīta it is defined as आरोहधनिवर्जवक्र, अवरोहसंपूर्ण.)

No. (41):—(*a*) Prabhāvatī

(*b*) Pāvanī

(*e*) Prabhāvatī: स रि मा प ध नी सा नि ।
ध म पा म रि गा रि सा ॥

No. (42):—(*a*) Raghulīlā

(*b*) Raghupriyā

(*c*) Raghulīlā: स रि मा प नि सा नी ध ।
नि प मा ग म री रि सा ॥

No. (43):—(*a*) Gīrvāṇa

(*b*) Gavāmbodhi

(*c*) Gīrvāṇa: स रि गा रि म गा मा ध ।
नि स नी ध स नी ध पा ॥ म ग री री ...

No. (44):—(*a*) Bhavānī

(*b*) Bhavapriyā

(*c*) Bhavānī: स रि ग म धा नि सा नि ।
ध ध मा ग ग री रि सा ॥

No. (45):—(*a*) Pantuvarāḷī

(*b*) Śubhapantuvarāḷī

(*c*) Pantuvarāḷī: स रि गा म प धा नी स ।
स नि धा प म गा रि सा ॥

No. (46):—(*a*) Tīvravāhinī

(*b*) Ṣaḍvidhamārgiṇī

(*c*) Tīvravāhinī: स रि गा म प धा पा नि ।
स नि धा प म गा रि सा ॥

No. (47):—(*a*) Sauvīra

(*b*) Suvarṇāṅgī

(*c*) Sauvīra: स रि गा रि म पा धा नि। स नि पा ध प मा ग री॥

No. (48):—(*a*) Jīvantinī
(*b*) Divyamaṇī
(*c*) Jīvantinī: (the gīta defines it as आरोहरिगवर्जित and अवरोहरिधवर्जित)

No. (49):—(*a*) Dhavaḷāṅgam
(*b*) Dhavaḷāmbarī
(*c*) Dhavaḷāṅgam: स मा ग मा प धा नी स। स नि धा प म गा रि सा॥ (in the gīta it is called धवळाङ्गी)

No. (50):—(*a*) Narmadā
(*b*) Nāmanārāyaṇī
(*c*) Narmadā: स रि गा मा ध नी सा नि। ध म पा मा ग री रि सा॥

No. (51):—(*a*) Rāmakriyā
(*b*) Kāmavardhanī
(*c*) Rāmakriyā: स रि गा म प धा नी स। स नि धा पा म गा रि सा॥

No. (52):—(*a*) Ramāmanoharī
(*b*) Rāmapriyā
(*c*) Ramāmanoharī: स रि गा मा प धा धा स। नि नि धा पा म गा रि सा॥

No. (53):—(*a*) Gamakakriyā
(*b*) Gamanaśrama
(*c*) Gamakakriyā: स रि मा पा ध नी सा नि। ध प मा गा म री रि सा॥

No. (54):—(*a*) Vaiśākha
(*b*) Viśvambharī
(*c*) Vaiśākha: स रि गा मा प धा नी सा। नि ध नी पा म गा रि सा॥

No. (55):—(*a*) Śyāmaḷa
(*b*) Śyāmaḷāṅgī
(*c*) Śyāmala: स ग री ग म पा धा नि। ध सा नी ध प मा ग री॥

No. (56):—(*a*) Trimūrti
(*b*) Ṣaṇmukhapriyā
(*c*) Trimūrti: स रि गा मा ध धा नी स। स नि धा म ग री रि सा॥

No. (57) :—(*a*) Sīmantinī
(*b*) Siṁhendramadhyama
(*c*) Sīmantinī : स रि गा म प धा नी स। स प मा ग रि गा रि सा॥

No. (58) :—(*a*) Siṁharava
(*b*) Hemavanti (Hemavantini)
(*c*) Siṁharava : स रि मा पा नि सा।
नि प मा रि ग री स नि॥

No. (59) :—(*a*) Dhaumyarāga
(*b*) Dharmavatī
(*c*) Dhaumyarāga : स रि गा म प धा धा स। स नि धा प म गा रि सा॥

No. (60) :—(*a*) Niṣāda
(*b*) Nītimatī
(*c*) Niṣāda : स ग री म प सा नि धा। म प नी प म गा रि सा॥

No. (61) :—(*a*) Kuntala
(*b*) Kāntāmaṇi
(*c*) Kuntala : स रि गा म प धा नी ध। स नी धा प म गा म री॥

No. (62) :—(*a*) Ratnabhāsurā
(*b*) Ṛṣabhapriyā
(*c*) Ratnabhāsurā : स रि मा ग रि मा पा नि। ध नि धा प म गा रि सा॥

No. (63) :—(*a*) Gotrāri
(*b*) Latāṅgī
(*c*) Gotrāri : स रि मा पा प धा धा स। नि ध पा म ग री रि सा॥

No. (64) :—(*a*) Bhūṣāvaḷī
(*b*) Vācaspati
(*c*) Bhūṣāvaḷī : स रि गा म प धा धा स। स नि धा प म गा रि सा॥

No. (65) :—(*a*) Kalyāṇī
(*b*) Mecakalyāṇī

No. (66) :—(*a*) Caturaṅgiṇī
(*b*) Citrāmbarī
(*c*) Caturaṅgiṇī : स म गा म प नी सा नि। ध नि पा गा म गा रि सा॥

No. (67) :—(*a*) Satyavatī
(*b*) Sucaritra
(*c*) Satyavatī : स रि म प ध नी धा स। नि ध पा म ग गा रि सा॥

No. (68):—(*a*) Jyotiṣmatī
(*b*) Jyotissvarūpiṇī
(*c*) Jyotiṣmatī: स रि गा म प सा सा नि। नि ध मा प म री ग सा॥

No. (69):—(*a*) Dhautapañcama
(*b*) Dhātuvardhanī
(*c*) Dhautapañcama: स रि गा म प नी पा स। नि ध पा म रि गा म री॥

No. (70):—(*a*) Nāsāmaṇi
(*b*) Nāsikābhūṣaṇī
(*c*) Nāsāmaṇi: स रि गा म प धा नी स। स नि धा प म गा रि सा॥

No. (71):—(*a*) Kusumāvaḷi
(*b*) Kosala
(*c*) Kusumāvḷi: स ग मा म प धा धा स। नि ध पा म ग मा रि सा॥

No. (72):—(*a*) Rasamañjarī
(*b*) Rasikapriyā
(*c*) Rasamañjarī: स रि गा म प धा नी स। स नि पा म म री रि सा॥

In the above list of Govinda's scales, the names under (*a*) for numbers 12, 17, 30, 36, 41, 42, 46, 50, 54, 56, 57, 59, 62 and 63 differ from those given by Veṅkaṭamakhin. In some cases Veṅkaṭamakhin's names are either not stated fully or differently spelt. In the case of the scales Toḍi, Māyāmāḷavagauḷa, Bhairavī, Kāmbhoji, Śaṅkarābharaṇa, Nāṭa, Varāli and Kalyāṇī, (*a*), (*b*) and (*c*) are similarly treated by the two authorities, except where (*a*) occurs as (*c*). It is noteworthy that Veṅkaṭamakhin's definitions of 'Bhairavī meḷa', 'Kāmbhojī meḷa', 'Śaṅkarābharaṇa meḷa', 'Śuddhavarāḷi meḷa', 'Pantuvarāḷi meḷa' and 'Kalyāṇī meḷa', (*vide* the Rāgaprakaraṇa of the Caturdaṇḍīprakāśikā) are accepted by Govinda along with the names to which he adds his own prefixes. Govinda differs from Veṅkaṭamakhin in substituting catuśśruti-ṛṣabha and—dhaivata for the pañcaśruti-ṛṣbha and —dhaivata used by the latter in the scales. There is close agreement in many cases between Veṅkaṭamakhin's sañcāra for (*a*) and Govinda's sañcāra for (*c*). It would appear that Govinda, having found that Veṅkaṭamakhin's scales partook the nature of janya rāgas in the light of his own scheme of scales, propounded his own names corresponding to those of Veṅkaṭamakhin; and defined his

scales as pūrṇa in āroha and avaroha, and the scales of Veṅkaṭamakhin as janya rāgas classified as such under his own meḷakartās.

The sañcāra of Govinda given in Chapter VII for scales and janyas is in the shape of formulae expressing the metrical definitions in the original. The following list gives some popular janya rāgas of Govinda which have not been defined by Veṅkaṭamakhin.

No.	Name of Rāga	Meḷa of origin	Govinda's Sañcāra.
(1)	Śuddhasīmantinī	No. (8)	स री गा मा प धा धा सा । स ध पा मा ग री रि सा ॥
(2)	Kalgaḍā	No. (13)	स रि गा पा प धा नी स । स नि धा पा प गा रि सा ॥
(3)	Jaganmohinī	No. (15)	स ग मा पा नि सं चैव । स नि पा मा ग रि ग सा ॥
(4)	Sindhurāmakriyā	No. (15)	स ग मा पा ध नि ध नी । स नी प ध प म ग स ॥
(5)	Devakriyā	No. (20)	स रि गा मा प धा नी ध । नी पा ध म ग री रि सा ॥ स री..
(6)	Vasantavarāḷī	No. (20)	स रि मा पा ध नी सा नी । ध प गा री स री स सा ॥
(7)	Phalamañjarī	No. (22)	स ग गा म म धा धा स । नि ध पा म ग मा रि सा ॥
(8)	Jayantasenā	No. (22)	स ग मा म प पा धा सा । स नि धा प म गा स नि ॥
(9)	Ābhogi	No. (22)	स रि गी म ग मा धा स । स ध मा म ग री रि सा ॥
(10)	Jayanārāyaṇī	No. (22)	स रि गा म प धा सा नि । ध प मा ग रि सा ध सा ॥
(11)	Manoharī	No. (22)	स ग री गा म पा धा सा । ध प मा गा रि सा ध सा ॥
(12)	Kalānidhi	No. (22)	स रि गा म स पा मा ध । नि स नी ध प मा ग री
(13)	Pañcama	No. (22)	स रि धा ध प नी सा नि । ध प मा ग रि सा नि सा ॥

(14) Siddhasena	No. (22)	स ग री ग म पा धा सा। नि ध मा प म री ग री॥
(15) Śuddhabaṅgāḷā	No. (22)	स रि मा प ध सा धा प। म रि गा रि स धा ध सा॥
(16) Mañjarī	No. (22)	स ग री ग म प नी धा। नि स नी ध प मा ग री॥
(17) Nārāyaṇī	No. (28)	स रि मा प ध सा नी ध। प म री स स नी ध सा॥
(18) Māḷavī	No. (28)	स रि गा म प नी मा ध। नि सा सा नि ध नी प मा॥ म ग री स च युक्तम्...॥
(19) Pratāpavarāḷī (According to the Sañcāra, this must be Kuntalavarāḷī. The error may be due to the scribe.)	No. (28)	स मा पा ध नि ध नि धा सा— नि ध प मा म स सा नि सा॥
(20) Sarasvatīmanoharī	No. (28)	स रि गा म धा सा धा नि। प म गा रि स री स सा॥
(21) Sāma	No. (28)	स रि मा प ध सा धा पा। म ग री स ध सा ध सा॥
(22) Baṅgāḷā	No. (28)	स रि गा म प मा री पा। स नि पा मा म री ग री॥
(23) Rāgapañjaram	No. (28)	स रि मा पा ध नी धा सा। स नि धा म रि सा ध सा॥
(24) Ravicandrikā	No. (28)	स रि गा म ध नी धा स। स नि धा म ग री स सा॥
(25) Kokiladhvani	No. (28)	स रि गा म ध नी धा स। नि ध नी प म गा रि सा॥
(26) Navarasakannaḍa (The use of the term मूर्छना in the definition is significant.)	No. (28)	स ग मा प स नी धा म। ग रि सा इति मूर्छना॥
(27) Nāgasvarāvaḷi	No. (28)	स ग गा म म पा धा स। स ध धा म ग सा ध सा॥

(28) Bahudāri — No. (28) स ग मा प ध धा नी सा । स नि पा म ग सा नि सा ॥

(29) Kolāhalam — No. (29) स प मा ग म पा धा नी । स नि धा प म गा रि सा ॥

(30) Janarañjanī — No. (29) स रि गा म प नी सा स । स ध पा म रि सा नि सा ॥

(31) Candrajyoti — No. (41) स रि गा म प धा धा स । स ध धा प म गा रि सा ॥

(32) Mandāri — No. (50) स रि गा म प नी नी स । स नि पा म ग री रि सा ॥

(33) Haṁsanādam — No. (60) स रि मा प ध नी सा नि । ध नी प मा रि री स सा ॥

Kharaharapriyā and Harikāmbodi, embodied in gītas by Govinda, are not mentioned or dealt with by Veṅkaṭamakhin.

In classifying the following rāgas according to their meḷas, Veṅkaṭamakhin (V) and Govinda (G) agree in most cases and do not in others.

(1) Bhūpāla — No. (8)—G. / No. (9)—V.

(2) Saurāṣṭra — No. (15)—G and V.

(3) Āhari — No. (20)—G: स रि गा मा प धा नी सा । स नि धा पा म गा रि सा ॥ / No. (20)—V.

(4) Devagāndhāri — No. (20)—G: स ग मा पा नि सा सा नि । प ध पा मा ग री रि सा ॥ / No. (22)—V.

(5) Udayaravicandrikā — No. (20)—G: स ग मा पा नि सा नी सा । स नि पा मा म गा ग सा ॥ / No. (9)—V.

(6) Ghaṇṭāravam — No. (20)—G: स ग री ग म पा नी ध । नि स नी ध प मा ग री ॥ / No. (20)—V.

(7) Dhanyāsi — No. (20)—G: स ग मा प नि सा सा नि । ध प मा ग रि सा नि सा ॥ / No. (20)—V.

(8) Kiraṇāvali	No. (21)—G:	स रि गा म प धा नी स। स स पा म ग री रि सा॥
	No. (21)—V.	
(9) Śuddhadhanyāsi	No. (22)—G:	स ग गा म म पा नी स। स नि पा म म गा ग सा॥
	No. (22)—V.	
(10) Chāyātaraṅgiṇī	No. (28)—G:	स रि मा ग म पा नी स। नि ध पा म ग री रि सा॥
	No. (28)—V.	
(11) Balahaṁsa	No. (28)—G:	स रि मा प ध सा नी ध। प म री म ग सा नि धा॥
	No. (28)—V.	
(12) Nīlāmbarī	No. (28)—G.	
	No. (29)—V.	
(13) Śuddhasāveri	No. (29)—G:	स रि मा प ध सा धा स । स ध पा म रि सा ध सा॥
	No. (1)—V.	
(14) Kannaḍa	No. (29)—G:	स रि गा म प मा धा नि। ध प मा प ग मा रि सा॥
	No. (28)—V.	
(15) Sāma	No. (28)—G:	
	No. (29)—V.	

There are a few discrepancies in the manuscript of Govinda's work. In the manuscript, a preliminary catalogue of janyas is given for each meḷa, and in a subsequent section these rāgas are defined in the same order. Śuddhasāveri is enumerated in the catalogue under No. (28), but defined under No. (29) in the śloka and the gīta. The śloka defining Pratāpavarāḷi differently from the gīta which describes it as as आरोहगधनिवर्जित and अवरोहनिवर्जित; this shows that the sañcāra given in the śloka, as already pointed out, must belong to Kuntalavarāḷī. The definitions of rāgas for the catalogues under Numbers (15), (22), (28) and (29) do not complete the list in each case. In the printed version of the gītas, the gītas of the manuscript are in some cases amended or modified, and new rāgas are defined. The printed version defines the following rāgas, which are not found in the manuscript:— (1) Vasanta, (2) Paraju, (3) Māñji, (4) Nāyakī, (5) Khamās, (6) Byāg, (7) Aṭāṇā, (8) Pūrvikalyāṇī, (9) Yamunākalyāṇī,

(10) Junjhuṭi, (11) Sahānā and (12) Darbāru. This version also defines Devagāndhāri under No. (29) as आरोहसंपूर्णवक्र and अवरोहसंपूर्ण ; Subbarāma Dīkṣitar calls this Deśīya Devagāndhāri and classes it under No. (29). Deśākṣi is called शूलिनी-मेलजनित in the manuscript gīta, but हरिकाम्भोदिजनित in the printed gīta and classified accordingly. The printed version derives Āhari and Dhanyāsi from No. (8), whereas the manuscript illustrates them under No. (20).

APPENDIX IV.

NEW RĀGAS.

Veṅkaṭamakhin's permutation of the meḷakartā rāgas contributed a large number of new scales to the Karnatic system. Tyāgarāja and Dīkṣita composed in many of these scales and their janya rāgas, thus making the meḷakartā system serve the practical needs of the art. With the development of the elaborate method of deriving janya rāgas in all possible ways of permutation and combination of the notes of each scale, the seventy-two kartās yield thousands of new rāgas. Tyāgarāja made use of many of them which were unknown before his time, and himself conceived many rāgas. Northern rāgas were frequently incorporated in Karnatic music, *e.g.*, Hamir Kalyāṇī, Yaman Kalyāṇī, etc. Veṅkṇṇa Kavīndra (latter half of 18th century) in his opera called 'Pārvatī Kalyāṇam' has composed songs in Mohana Kalyāṇī, Rūpakakalyāṇī, Maṅgaḷakaiśika, Brindāvana Sāraṅga, Gaurī, Pantuvarāḷī Māḷavaśrī, etc. Mahāvaidyanātha Aiyar has composed a rāgamālikā including the 72 meḷakartās; this composition is interesting because it gives the definition of all the scales by a supreme master of the art. The sañcāra for some unfamiliar or new rāgas which have been used for composition in recent years is given below, with the names of the composers.

Name of rāga.	Meḷa.	Sañcāra.
I. Paṭṇam Subrahmaṇya Aiyar:—		
(1) Kadanakutūhalam	29	S r m d n g p s - S m d p m g r s.
II. Tiruvaiyar Subrahmaṇya Aiyar:—		
Name of Rāga.	Meḷa.	Sañcāra.
(1) Māḷavaśrī	10th	S g m p n d n s - S n d p m g s.
(2) Bhujaṅginī	16th	S r s m g m n d n s - S n d m g r s
(3) Surasindhu	15th	S m g m p n d n s - S n d p m r g r s.
(4) Āhirināṭa	17th	S m g m p d n s - S n p d n p m g s.
(5) Kannaḍagauḷa	22nd	S r g m p n s - S n d p m g s.
(6) Deśākṣi	35th	S r g p d s - S n d p m g r s.
III. Śivarāmiah:—		
(1) Svambhusvara rāga	29th	S g p s - S p g s.

APPENDIX IV.

Name of rāga.	Meḷa.	Sañcāra
IV. Muthiah Bhāgavathar:—		
(1) Puṣpalatikā	22nd	s r g m p n s - s n p m g r s.
(2) Māyāpratīpam	22nd	s m g m p d n s - s d p m g r s.
(3) Vīṇādharī	16th	s r g p d n s - s n d p m g r s.
(4) Mohanakalyāṇī	65th	s r g p d s - s n d p m g r s.
(5) Harināŕāyaṇī	28th	s r g m p m d n s - s n p m g r s
(6) Śuddhalalitā	17th	s r g m d n s - s n d m g r s.
(7) Lalitā	15th	Do. Do.
(The distinction made between 6 and 7 is noteworthy).		
(8) Gauḍamallāru	29th	s r m p d s - s n d m g r s.
(9) Cakrapradīpta	22nd	s r g m p m d n s - s n d m g s.
(10) Vijayanagarī	58th	s r g m p d s - s d p m g r s.
(11) Ūrmikā	57th	s r g m p n s - s n p m g r s.
(12) Valaji	28th	s g p d n s - s n d p g s.
(13) Guharañjanī	28th	s r s m p d n s - s n d n p m g s.
(14) Navaratnavilāsam	22nd	s r m p n s - s n d m g r s.
(15) Budhamanoharī	28th	s r g m g p s - s p m g s.
(16) Paśupatipriyā	29th	s r m p m d s - s d p m r m s.
(17) Siṁhavāhinī	27th	s g m p d n s - s n d p m g r s.
(18) Amṛtavarṣaṇī	60th	s g m p n s - s n p m g s.
(19) Karṇarañjanī	22nd	s r g m g p d s - s n d p m g r s.
(20) Sumanapriyā	28th	s r g m g p d p s - s d s p g m r s.
(21) Nāgabhūṣaṇī	29th	s r m p d s - s n d p m r s.
(22) Haṁsānandi	53rd	s r g m d n s - s n d m g r s.

APPENDIX V.

THE DRONE.

The drone plays a very important part in our system of music. It keeps manifest the keynote which by being constant controls the music, for which it also supplies the background. The structure and spirit of every rāga can be understood only by reference to the keynote which synthesises the various interpretations of each rāga which together go by the name ālāpa. Considering how essential it is for the melodic system, the drone can be said to have been employed from the time since music was practised in this country as a fine art.

The original nature of the drone is shrouded in mystery. Mr. Clements in his 'Introduction to the Study of Hindustani music' states that in the system of Bharata and Śārṅgadeva the drone-strings were dha (low natural), ri (low natural) and ga and the speaking string upon which the air was played was ri. According to Mr. Clements, this conclusion is inferential but nevertheless valid and based on Captain Day's inference. With this view is to be compared Śārṅgadeva's description of the Vīṇā called Ālāpinī as producing sa and ma on the open strings. Though Messrs. Clements and Fox-Strangways are of the opinion that Bharata and Śārṅgadeva are silent about the drone, their texts are not without references to it. Śārṅgadeva refers to the employment of the 3 sthānas (octaves) in music and lays stress on the accurate rendering of the svaras in each octave according to their respective śrutis. Even the Ṛkprātiśākhya refers to the mandra, madhyama and uttama (*i.e.*, tāra) sthānas and the 7 svaras which belong to each. The 3 sthānas are thus used from very ancient times and especially in lay music. For the exactness of intervals used, the help of a device like the drone would appear to be indispensable. Secondly the unity of instrumental and vocal music is emphasised by authorities from Bharata downwards. According to Bharata the oneness or unison of the voice, the vīṇā and the flute is praise-worthy (शारीरवैणवंशानां एकीभाव: प्रशस्यते). Śārṅgadeva holds this agreement between these sources of music to be the measure of sweetness: ness: वंशवीणाशरीराणाम् एकीभावेन यो ध्वनि: । तत्र श्रुतिविशेषस्य प्रमाणं विदुधा जगु: ॥

The Śilappadikāram expresses the same idea in the lines

'வாங்கிய வாரத் தியாழுங் குழலு
மேங்கிய மிடறு மிசைவன கேட்பக்
கூருகிர்க் கரணங் குறியறிந்து சேர்த்தி'
(அரங்கேற்று காதை)

The prominence attached to the agreement in music is seen in the explanation of the terms लय and एकताल in the Nāṭyavarga of the Amarakośa (circ 6th century A.D.), in the commentaries of Sarvānanda (1159 A.D.) and Bhānuji Dīkṣita (close of the 16th century A.D.). This unity of music is hard to realise without the aid of the drone. Thirdly, in the works on musical theory, the description of musical instruments and concerts, though lacking in any direct reference to the drone, points out the part it must have played. Describing the avanaddha kutapa, Bharata lays down that among those to be seated on the stage are the maurajika, pāṇavika and dārdarika (drummers with different drums), and in the kutapa the performers according to him are a songster, a player on the vīṇā, two flutists and songstresses. It is difficult to imagine how these concerts can perform without a drone.

The Saṅgīta Ratnākara throws a good deal of light on the problem of the drone. Śārṅgadeva mentions several kinds of vīṇās but none of them is described as having a drone-string. From various references in the work I conclude that the flute, besides being one of the main musical instruments, was also used to fiulfil the part of the drone in the system described by Śārṅgadeva. The good flutist, according to Śārṅgadeva, presents, exhibits or keeps manifest the three octaves (mandra, madhya and tāra). The original text is गातॄणां स्थानदायिता. Kallinātha accepts this as also another version (तानदायिता) in his Commentary 'गातृभिर्गातुमिष्यमाणस्य तानस्य रागानुगुण्येन प्रथमं प्रदर्शनम्। स्थानदायितेति पाठे तु स्थानानि मन्द्रमध्यताराणि तेषां प्रदर्शनम्।'. Since the editor of the Saṅgīta Ratnākara says that the reading तानदायिता: is nowhere found in the original rescensions of the work and as Kallinātha himself recognises the other reading, we may accept स्थान दायिता as a valid basis of argument. This is supported by a reference in the Nartanādhyāya where Śārṅgadeva, in describing the guṇḍalī-vidhi, refers to the stopping of all instrumental music and the subsequent singing of the vocalist to the octave prescribed by the flutists and accompanied by them (निवारितेषु वाद्येषु दत्ते स्थानेऽथ वांशिकैः। सह गायति संयुक्तैस्तैः सार्धमथ गौण्डली॥). These and similar references show

that the flute was used for the purposes of a drone. This might have been due to the volume of the tone of the flute which is greater than that of the vīṇā, and because the notes on the flute were of fixed and invariable pitch, which should have easily provided a drone of standard pitch, as contrasted with the freedom with which the wires of the vīṇā could be turned to different pitches. Śārṅga-deva says that when the flutist played the madhyasaptaka, there was a perfect blend of the notes of the flute, the vīṇā and the voice: सुशिक्षितेन रचितात् फूत्कारान्मध्यसप्तके । जायन्ते वैणशारीरस्वरसंवादिनः स्वराः ॥

This shows that the flute was turned to the middle register adopted in vocal music, and even when used as an accompanying instrument determined the pitch in the rendering of music. The flute has been retained as an accompanying instrument in the music used for the dance down to modern times.

In the light of extant literature, the first work to mention explicitly and define the drone is the Svarameḷakalānidhi of Rāmāmātya. He describes several varieties of Rudravīṇā (which closely corresponds to our modern vīṇā) with different modes of tuning. In defining the Śuddha Meḷa Vīṇā, he says that the 3 wires below the 4 mainstrings are to be tuned to madhya sa, mandra pa and mandra sa. These three are called the śruti strings'. (अधःस्थानां त्रितन्त्रीणां स्वरयोजनमुच्यते ॥ * * * * एतास्तिस्रोऽपि तन्त्र्यस्तु कथ्यन्ते श्रुतिसंज्ञकाः ॥). This definition employs the term 'śruti' to indicate the drone. Hence when Mr. Fox-Strangways says that the śruti in the south means the keynote, which he points out is a transference of meaning from 'a nice distinction of pitch' to 'that which determines pitch', we must remember that the term is used to mean both, and that this usage is at least four centuries old. Veṅkaṭamakhin's Madhya Meḷa Vīṇā exactly corresponds to the modern Vīṇā in tuning, and among the sidestrings the one tuned to tāra ṣaḍja is called ṭīpi (टीप्यभिधा). The same string is now known by the name ṭīp sāraṇi or ṭīpṣaḍja. It may be noted that Śārṅgadeva describes the playing of the tāra notes on the flute by the term टीपा (or टीप or टीपिः) तारस्था मुखसंयोगसंकटमुखरन्ध्रके । तं वादनप्रकारं च टीपामाचक्षते जनाः ॥ Rāmāmātya uses the term आधारश्रुति to mean keynote.

The tamburā may have been the offshoot of the vīṇā after it was endowed with the drone strings. The principle of its construction is the mounting of the drone-strings on the frame of the vīṇā

without the frets. The Kalpadrukośa of Keśava (1660 A.D.) mentions Tumburu's vīṇā among others by the name Kalāvatī (तुंबरोस्तु [तुंबुरोस्तु ?] कलावती). The tamburā might have been been named after Tumburu. The system of tuning mentioned by Rāmāmātya and subsequent writers could have been adopted only after ṣaḍja and pañcama became invariable notes fixed in relation to one another as fifths. If so, the system might be even as old as Śrī Vidyāraṇya's time. The drone-strings of the tamburā at present are tuned to mandra sa, mandra pa and madhya sa (the same, it is essential to note, as the tuning of the śruti strings of Rāmāmātya's Śuddha Meḷa Vīṇā) : this is known as the pañcama-śruti tuning. If mandra ma is substituted for the mandra pa given above, it is known as the 'madhyama-śruti' tuning. The drone-strings of the vīṇā are at present tuned to madhya sa, madhya pa and tāra sa. This pañcamaśruti tuning is changed to madhyama-śruti by altering the madhya pa into madhya ma. In the latter case the melody starts on madhya ma on the main wire and gives a beautiful effect, *e.g.*, in the rāgas Kurañji, Juñjhuṭi, etc. A famous Vaiṇika of the past generation used to have madhya sa, antara or sādhāraṇa ga, and tāra sa for drone in the case of some rāgas. The drone with antara ga gives a good effect for rāgas like Kalyāṇī, and that with sādhāraṇa ga suits Udayaravicandrikā and similar rāgas.

The Nāgasvara is mentioned in the 'Krīḍābhirāma' of Vallabharāya (1420 A.D.) edited by Mr. M. Ramakrishna Kavi as follows:—

నాగస్వర సుషిరసరన్నాగ వంశ్యాది వివిధనానారాగ-
ప్రాగల్భ్య ప్రకటఫణాభోగములై యూడఁజొచ్చె భోగీంద్రంబుల్ ॥

According to Mr. Kavi the Nāgasvara is referred to in a much older work. A lexicon of similar age is stated by a scholar to refer to the instrument as also Nāgasura or Nāgasara. If this is so, the employment of the drone can be credited with greater antiquity than what is indicated by other textual references. The Nāgasvara is supported by a drone of very loud quality consisting of a single note *viz.*, the 'ādhāra śruti' represented by the mandra ṣaḍja.

APPENDIX VI.

THE MĒḶAS OF ŚRĪ VIDYĀRAṆYA.

(as described by Govinda Dīkṣita in his Saṅgīta Sudhā).

Names of Mēḷas.	षड्जः	शुद्ध-ऋषभः	शुद्धगान्धारः पञ्चश्रुति-ऋषभः	साधारण-गान्धारः षट्श्रुति-ऋषभः	अन्तर-गान्धारः	शुद्धमध्यमः	षट्श्रुति-मध्यमः	पञ्चमः	शुद्धधैवतः	शुद्धनिषादः पञ्चश्रुति-धैवतः	कैशिकि-निषादः षट्श्रुतिधैवतः	काकली-निषादः	षड्जः
1. Naṭṭa	स			रि	ग	म		प			ध	नि	स
2. Gurjarī	स	रि			ग	म		प	ध			नि	स
3. Varāḷī	स	रि	ग				म	प	ध			नि	स
4. Śrī	स		रि	ग		म		प		ध	नि		स
5. Bhairavī	स		रि	ग		म		प	ध		नि		स
6. Śaṅkarābharaṇa	स		रि		ग	म		प		ध		नि	स
7. Āhari	स		रि	ग		म		प	ध			नि	स
8. Vasanta Bhairavī	स	रि			ग	म		प	ध		नि		स
9. Sāmanta	स			रि	ग	म		प			नि	ध	स
10. Kāmbōdi	स		रि		ग	म		प		ध	नि		स
11. Mukhāri	स	रि	ग			म		प	ध	नि			स
12. Śuddharāmakriyā	स	रि			ग		म	प	ध			नि	स
13. Kedāragouḍa	स		रि		ग	म		प		ध	नि		स
14. Hījujji	स	रि			ग	म		प	ध	नि			स
15. Dēśākṣi	स			रि	ग	म		प		ध		नि	स